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FOREIGN OBJECT DAMAGE IN NAVAL AIRCRAFT ENGINES

Jack "B" Mills



NAVAL POSTGRADUATE SCHOOL Monterey, California



THESIS

FOREIGN OBJECT DAMAGE IN NAVAL AIRCRAFT ENGINES

bу

Jack "B" Mills

June 1981

Thesis Advisor:

John W. Creighton

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operating environment are discussed. Conclusions and recommendations are included.



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Foreign Object Damage in Naval Aircraft Engines

bу

Jack "B" Mills Lieutenant Commander, United States Navy B.S.A.E., Auburn University, 1972

Submitted in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE IN MANAGEMENT

from the

NAVAL POSTGRADUATE SCHOOL June 1981 1 0235 1 5955 5 1

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I. INTRODUCTION

A. BACKGROUND

Foreign object damage (FOD) is the damage caused when debris is ingested by, or lodged in a system/mechanism, or that causes a material failure that renders the equipment unstable or unsafe for operation. While FOD can affect any aircraft system, this thesis is restricted to the investigation of FOD in naval aircraft engines, and any reference to FOD, hereafter, will be so restricted.

The effects of FOD impact adversely on naval aviation. It accounts for the largest percentage of premature removals of gas turbine engines from naval aircraft. The resulting repair effort consumes excessive maintenance man-hours, imposes severe unscheduled work loads on supporting activities, creates a shortage of ready for issue (RFI) engines, and depletes spare parts in the inventory, thereby creating an unacceptable impact on the fleet logistics support structure. These effects combine to reduce operational readiness and training capability.

The author could find no authoritative statement as to the annual cost incurred by the Navy for FOD. Commander Task

Force Seven Seven estimated that the depot level repair costs,
for calendar year 1980, for the TF-30 engines under his cognizance alone, would be \$5.73 million. That does not include
the costs expended for intermediate level repair. A 1979



Naval Audit Service, Western Region, Report estimated the depot level repair costs for 1978 to be more than \$49 million. These are only estimates. Their message, however, is clear; FOD is costly. That cost can only increase as engines become more sophisticated, their repair costs increase, and inflation takes its toll. If the Navy is to realize a reduction in the cost of FOD, the factors affecting FOD must be clearly understood and management attention focused on them. These factors include the foreign objects, the ingestion process, and the operating environment.

B. THESIS OBJECTIVE

The purpose of this investigation was to positively identify the causes of FOD in naval aircraft engines.

C. METHODOLOGY

The overall approach was to examine the historical data currently available, and to reduce it to a usable form. Additionally, interviews were conducted, both by telephone and in person, with fleet organizational and intermediate level maintenance personnel, various Naval Air Rework Facility (NARF) personnel, and aircraft contractor personnel.

The primary sources of historical data were various 3-M reports, Naval Aviation Safety Office Unsatisfactory Report Files, and Commander, Naval Air Forces, Pacific (CNAP) and Atlantic (CNAL) FOD message reports. Considerable effort



was expended to ensure that no one FOD incident was counted more than once. This data is presented in Appendix I.

The Fleet Commander's FOD reports were considered the primary data source because of the narrative cause section.

3-M data was used primarily to cross check for double counting and to try to reduce the significant number of unknowns listed in the other reports. Reduction of the unknown category proved to be impossible.

Data for the period from 1 June 1979 to 31 December 1980 was utilized because it was considered to be the most complete and was easily attainable. Very early in the effort it became apparent that it would be futile to try to accurately account for all FOD incidents occurring in the data period as no single source of data existed. Nor would it be possible to account for the large variations in the number of incidents listed in each of the various reports. Furthermore, no reporting system is in use by NARFS, so data on engines repaired by them is non existent. The source material reduced yielded 1143 FOD incidents, 636 of those had attributal cause.

The interviews were considered necessary to gain an intuitive feel for the accuracy of the causes listed on the various FOD reports. They also provided an insight as to the difficulty of determining the actual cause of the FOD.

Research was restricted to tactical aircraft which operate both ashore and afloat. Exceptions to this were the CH-53 helicopter, and the A-4, which, with the exception of the



training command operates primarily ashore. The F-4 data included Marine Squadrons that also operate primarily ashore.



II. FOD REPORTING

FOD reporting procedures are not, in themselves, an objective of this thesis. A discussion of them is required here only because they provided the basis for the data compiled.

No single source of data exists for FOD, though the 3-M aviation engine removal/FOD report is probably the most accurate source for total numbers of FOD. For this reason various reports were used for this research.

A. 3-M REPORTS

3-M reports are computer generated summations from data stored in the 3-M maintenance data collection subsystem. The source document for this report is the OPNAV Form 4790/60 VIDS/MAF. The aviation engine removal/FOD report uses only four malfunction codes in the cause for removal section; they are:

FOD 301: FOD-cause, External to Aircraft or Unknown

FOD 302: FOD-cause, self-induced by engine material failure (not a valid malfunction code)

FOD 303: FOD-cause, bird strike

FOD 304: FOD-cause, self induced by ingestion of aircraft parts such as dzus button, rivet, fastener, fairing piece, etc.

Under these categories the data would have reduced to:



FOD 301 : 844

FOD 302 : 69

FOD 303 : 24

FOD 304 : 206

For management purposes then this would mean that FOD 301 would represent 74% of all FODS with no breakout of the unknowns.

B. CNAL/CNAP FOD REPORTS

Both Naval Air Force Commanders, Atlantic and Pacific, require FOD reports for each organizational and intermediate (IMA) activity. They differ slightly in report requirements, but they both require a narrative description of the cause of the FOD incident. The IMA report requires a cross reference to the date-time-group of the operating activity's FOD message report. This cross-reference requirement helped to prevent double counting during research. Additionally, it uncovered engines that had FOD damage that was undetectable at the squadron level. Though these reports are not computerized, the narrative section proved invaluable, and for this reason they were chosen as the primary vehicle for this research.

C. NARF DATA

Currently NARF's are not under any reporting system except for engineering investigations (EI) reporting. Therefore most data for engines sent to a NARF for depot level repair is lost. Responses to Commander, Naval Aviation Logistics Center



questionnaire Serial 222/13700/1636 of 26 November 1980, indicate that a significant number of engines reach the NARF's for standard level depot maintenance (SDLM) with FODed engines. This is not surprising in light of the number of FODed engines that exhibit no degradation in operating characteristics whatsoever. With no reason to suspect FOD the operating activity cannot be expected to inspect for FOD damage, nevertheless data is lost for collection purposes.

An engine can be sent to a NARF that is a designated cognizant field activity (CFA) for an engineering investigation. EI's are then conducted to determine the cause of the malfunction, in this case the cause of the FOD. Engineers from two CFA's were interviewed to determine the value of these EI's. Their response was that about 90% of the time no accurate cause could be determined and that the best they could do was an educated guess based on damage characteristics. As with other NARF data, EI results are not easily obtainable, and because so few are requested they were not considered for inclusion in the source data.

D. PROBLEMS WITH FOD REPORTING

1. Impact

FOD reporting has increased in significance in the Navy recently. Most of this new emphasis has been placed on reducing the number of reports that list unknown as a cause. Interviews with fleet personnel, both the workers and middle



management revealed a feeling of frustration over this emphasis. No one denies the value of pursuing an aggressive FOD reporting program and most indicated strong support for it. The frustration they feel stems from the pressure that is brought to bear to assign a cause even when they have done their best but cannot evaluate the cause. This situation can quickly lead to "pencil-pushing" and can result in an overall degradation of the program,

2. Assigning Cause

The only way to determine the cause of FOD with certainty is to see foreign material ingested in an engine and then to match the damage characteristics to that object, or to find pieces of the object in the engine. Bits of gravel, concrete, and non-skid will sometimes adhere to the rotor blades or stator vanes, but an engine, due to the high velocity of airstream, will rarely retain the material that caused the damage. This usually means that FOD cause is guessed at by damage characteristics.

Damage characteristics can go a long way in providing a good educated guess as to the category of the material causing the FOD. Nicks with a thread pattern or indicating a special type fastener, or dents attributable to micro-FOD offer strong evidence of the type of material that was ingested but not where it came from or when the FOD occurred. Damage characteristics do not offer conclusive proof.

An engine can be FODed and show no degradation in operating characteristics. This fact was verified by the message



reports reviewed and in interviews with IMA repair personnel,
NARF engineers and engine contractor personnel. In one instance
a squadron turned in an engine for a routine inspection and
requested a quick-turn-around because the engine was operating
well. The subsequent inspection revealed that a 12th stage
compressor blade was missing. Research also proved that material that usually causes FOD can be ingested with no damage
incurred.

FOD is normally investigated when an engine exhibits operating characteristics consistent with FOD, i.e., compressor stalls, inability to produce full power, or flames exiting the tailpipe. In this case there is no way of telling how long the engine was FODed prior to the problem surfacing. It could have FODed on the previous flight or it could have happened many hours ago. The problem here is the tendency of maintenance personnel to assign the FOD to the last flight. If a fastener or some miscellaneous hardware is then found missing it tends to become the cause, and the location is assigned to the carrier/base where the FOD was discovered. Preflight and turn-around inspections often uncover FOD in the first few compressor stages which also leads to a FOD investigation. In this instance there is a high probability that it happened on the previous flight.



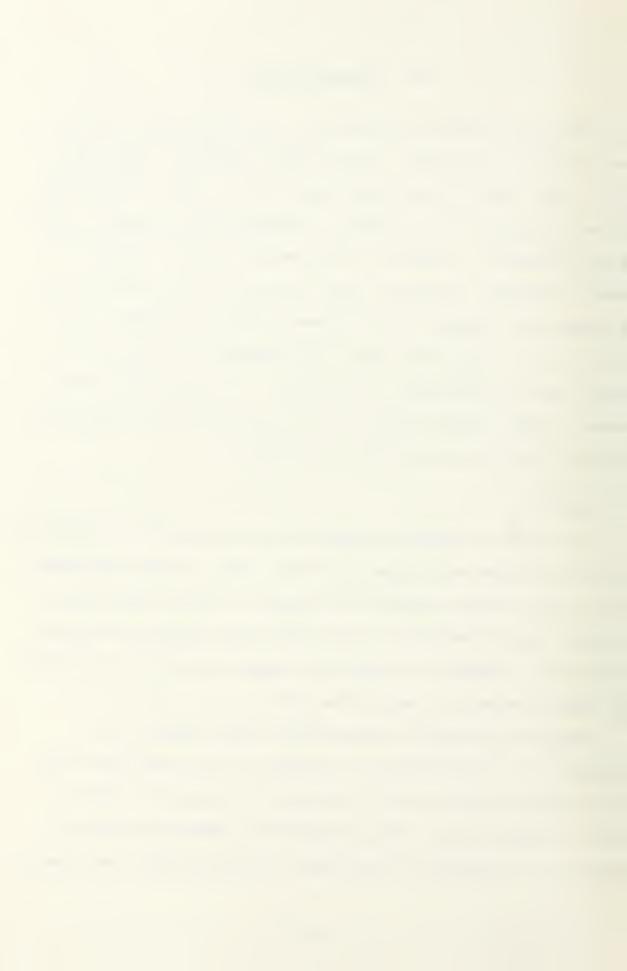
III. CAUSES OF FOD

Modern jet aircraft engines are axial flow gas turbines that operate at high RPM. They produce thrust by expelling air at high velocity and high temperature. Close tolerances and exotic metals are required to compress the air and to heat it sufficiently to produce the necessary thrust. Because of these tolerances and metals they are particularly susceptible to damage from objects that are swept down the intake along with the air. Any object that can physically fit down the intake has the potential to cause FOD. To adequately assign cause to FOD requires that both the actual objects themselves, and the ingestion process be investigated.

A. OBJECTS

The range of objects documented as causing FOD is astounding and includes such items as tools, rags, aircrew equipment, birds, ice, rocks, non-skid, and people. In one FOD report reviewed paint overspray on the first few compressor stages caused FOD. Though no structural damage occurred it required an engine removal to remove the paint.

Figures (1) and (2) summarize the data compiled in Appendix I. The categories in Figure (1) are arbitrary and were chosen because of the frequency of occurrence and for ease of compilation. The rationale for assigning each incident to a category is the author's and therefore the numbers



could vary if different criteria were used. The narrative of each report also influenced which objects were placed in which category.

The tools category included masking tape, paper, aural protectors, flashlights and lenses, cranial helmets and intake screen parts, as well as ordinary hand tools. Landing gear and ordnance and canopy safety pins could have been included in aircraft and miscellaneous hardware as could have Calfax fasteners.

Calfax fasteners were categorized separately because informal liaison with the F-14 community indicated they were a troublesome FOD hazard. The low number found (18) could indicate that the original problem has been fixed. It could also point out a non homogeneity in the use of the FOD report narrative section. If the words fastener vice Calfax fastener were used in a report then that incident was placed in the aircraft/miscellaneous category.

B. THE INGESTION PROCESS

Debris, no matter where it is, will not cause FOD unless it is ingested by an engine. For an object to be ingested it must be near and in front of the engine intake. It can be lying there at rest or it can be propelled there by the wind or another aircraft exhaust. How close it must be depends on the size and shape of the object, the mass flow rate of the engine, whether it is at rest or in motion, and engine intake location, primarily its height above ground.



1. Dr. FOD and the Wayward Body

Dr. FOD and the Wayward Body is a U.S. Navy training film currently in use for FOD training and awareness. The film is good and it does a thorough job of discussing the FOD problem ashore. However, Dr. FOD suggests that for an object to be ingested it must be within 18 inches of the intake or be in motion. He uses a smoke generator and a stationary aircraft at high power to prove his point. The smoke generator is placed to the side of the aircraft and a light crosswind drifts the smoke in front of the aircraft. Only a small amount of smoke is ingested by the engine while most of it swirls near the ground in the engine generated vortex. film completely discounts differing mass flow rates for different engines and different intake heights above the ground. As the mass flow rate of an engine increases so does the zone about the intake where an object will be subject to ingestion. An object in motion will be ingested more readily than a stationary one. However, an object lying in a depression, in the ground or on the flight deck can approximate an airfoil shape, and be subjected to an airfoil like pressure differential. This pressure difference creates lift similar to an aircraft wing making the object easier to pick up, and increasing the probability of ingestion.

2. Design Factors

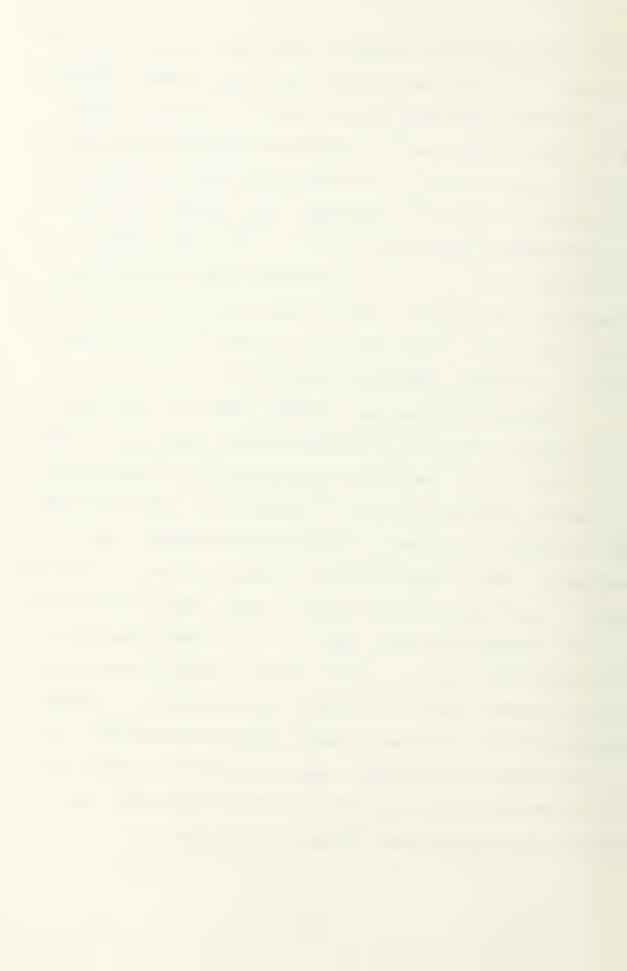
Engine intake location is a contributing factor to

FOD. It has little affect on objects blown in the proximity



of the intake by other aircraft or the wind, but intakes that are low to the ground such as the A-7, have a greater probability of FOD than ones with greater ground clearance. 52% of all A-7 FOD incidents with a cause assigned were from either non-skid, gravel/rocks or the steel shot used for surface preparation of flight deck non-skid. One carrier attributed 14 engine FODs to steel shot after a flight deck resurfacing - 13 of which were A-7's. The Air Wing embarked operated the standard mix of aircraft yet the FODs were nearly all to A-7's. Though this does not prove the relationship of intake height to FOD, it strongly suggests a correlation.

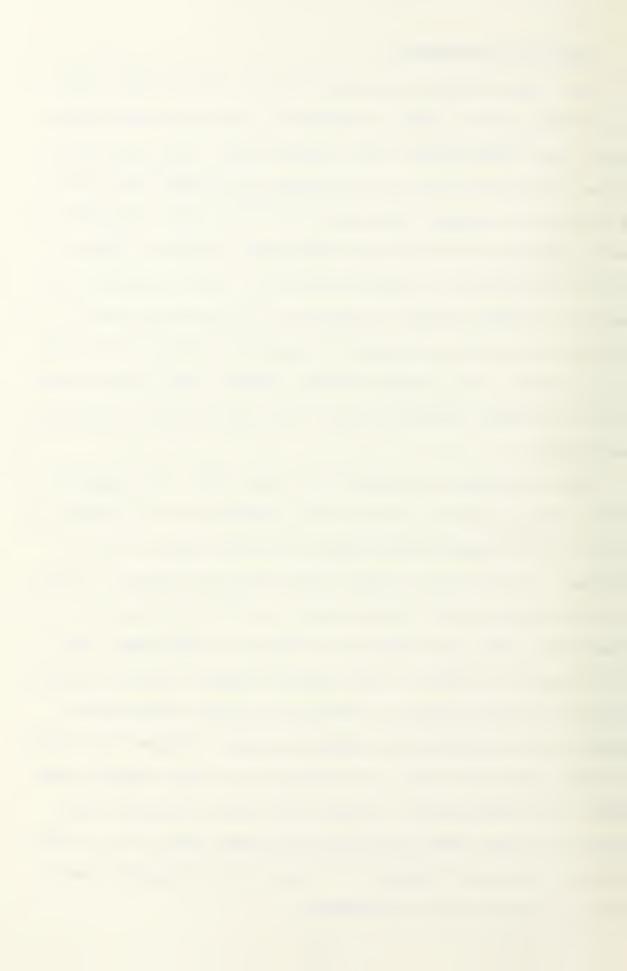
Hardware and fasteners located forward of the intake have a higher probability of producing FOD than those located aft of the intake. Removeable access panels are required for maintenance therefore removable fasteners are necessary. 206 FOD incidents were caused by miscellaneous hardware and fasteners. Only 3 such incidents occurred in the A-7 aircraft which is very clean forward of the intake. This low incidence in A-7's suggests that the fewer of these items forward of the intake the less of a factor they are in FOD. NAVAIR personnel indicated the F-14 aircraft FOD rate due to fasteners decreased when the Calfax fastener problem was improved. It is not possible to eliminate removable fasteners forward of the intake but proper tightening, sealing techniques, or design could significantly reduce this problem.



C. OPERATING ENVIRONMENT

Many fleet aviation personnel firmly believe that, despite design factors, FOD is caused by poor maintenance practices, poor housekeeping, and carelessness. They present a strong argument that if the operating environment were free of debris, and proper maintenance practices were followed, the incidence of FOD would be negligible. They are right. If it is not there it cannot cause FOD. There is ample evidence in the FOD reports reviewed that an operating base/carrier can go from the highest incidence of FOD per quarter to the lowest. No aircraft design changes occur during this period but major emphasis is put on cleaning up the operating environment.

Poor maintenance practices can create FOD. An ongoing effort must be made to reduce this problem but it involves more than just making maintenance personnel aware of the problem. It is easy to blame the mechanic who drops a scrap of safety wire on the flight deck of poor maintenance practices. That same mechanic, working on the flight deck of a carrier, at night, while wearing goggles, gloves, safety vest and cranial helmet is trying to finish a maintenance action so the aircraft can make the launch. There is 30 knots of wind across the deck, he is using only a red lensed flash-light for illumination, a launch cycle is in progress, and the safety wire scrap slips from his grasp while he is trying to put it into his FOD bag. Is that poor maintenance practice or the operating environment?



Naval aircraft operate both ashore and from carriers.

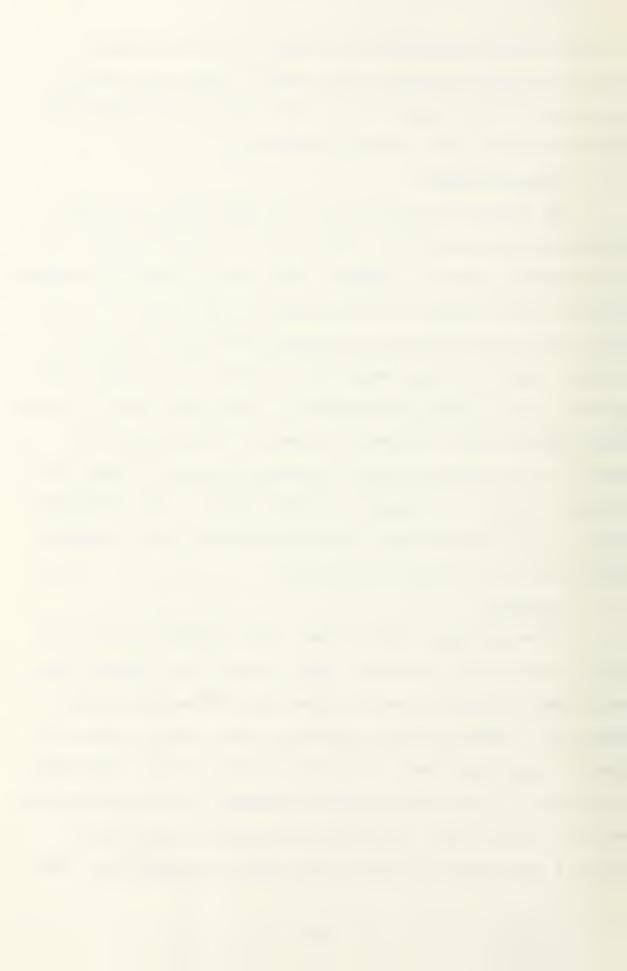
Each environment has special FOD hazards associated with it which must be fully understood by both fleet maintenance managers and other fleet aviation personnel.

1. Shore Stations

By virtue of their size alone shore stations create a laborious clean up problem. They exist in an environment that has an endless supply of debris. The wind can blow this debris back and forth across the airfield many times a day. A wind shift after a FOD walkdown can render that effort virtually useless. Shore stations employ vast numbers of personnel who are not a part of aviation and have no idea what FOD is or the safety hazard debris dropped carelessly on the ground can create. As an airfield ages it takes more money to keep the runways, taxiways, and ramps in sound repair. Less expensive repairs to the airfield are often substituted when wholesale resurfacing of all areas is required.

2. Carriers

Carriers also suffer from a size problem but the opposite one of shore stations. Many aircraft are jammed into very tight quarters, often so close that FOD walkdowns are inhibited. Padeyes become especially good hiding places for debris. The flight deck, especially during flight operations is subject to high relative winds necessary for the launch and recovery of aircraft. Underway replenishment operations create a vast amount of debris that must be cleaned up. Long



taxi intervals are impossible, aircraft must be started and turned up in congested traffic conditions and maintenance must be accomplished on the flight deck under adverse conditions. The launch and recovery cycles are fast paced events and in themselves can create a FOD problem.

Carrier landing operations create a special FOD hazard. A naval aircraft lands with a high rate of descent and its forward motion is abruptly terminated by an arresting wire. The forces imposed on the aircraft during this landing operation can loosen, or break loose hardware which is then thrown forward by momentum. As the aircraft touches down the pilot advances the throttles to military power to promote safety in the event of a bolter. Aircraft are normally landed at 45 to 60 second intervals. An aircraft can ingest its own lost hardware or that of a previously landed aircraft.

D. WHERE FOD OCCURS

Although FOD can and does occur in flight there is a general consensus among aviation personnel that FOD is most prevalent during taxi, takeoff and landing. This argument is hard to refuse and is taken to be fact. A 1977 FOD study supplied by the Naval Air Systems Command found no significant differences in the incidence of FOD among the various land bases.

This thesis was designed to be non-threatening, and therefore, no attempt to identify FOD incidence with a particular



operating unit, carrier, or shore station was attempted. At the outset of this research it was believed that the at sea FOD incidence would be higher than the land based incidence. Figure 2 shows that the incidence ashore (639) was higher than the at sea incidence (445). However, if the FOD incidence for those commands operating primarily ashore are removed the ashore/sea ratio becomes 449 to 445 respectively. A breakdown of the ashore/at sea flight hours was unavailable for this study so the FOD rates/1000 flight hours could not be determined. A correlation study of engine hours versus FOD incidence by major command revealed that a strong positive relationship (correlation coefficient = .95) between these two variables.



IV. CONCLUSIONS

A single data source for FOD statistics data must be developed. This would eliminate the large variance found in the number of reported FODs. The 3-M maintenance data collection subsystem (MDCS) is recommended for use as it is already in existence. The malfunction codes should be expanded to:

UNKNOWN

METALLIC OBJECT

NON-SKID

GRAVEL/ROCKS/CONCRETE

AIRCRAFT/MISCELLANEOUS HARDWARE

OTHER

Internal material failure, bird strikes and ice, as categories should be deleted.

The CNAP/CNAL FOD reports offer valuable insight to the FOD problem and they should be retained. They reflect, on a real time basis, trends in FOD incidence and therefore they can aid management in detecting trends early. They should not be considered authoritative as to the location or cause of the FOD occurrence. Care must be taken not to force fleet maintenance personnel into a defensive mode that could lead to pencil pushing.

Since a majority of FOD occurs during taxi, take off and landing the debris collected during FOD walkdowns can be considered a prime causal factor. If these items were analyzed



the percentages of each would roughly approximate its affect on the total number of incidents. It is recognized that this would not help assign specific cause to each incident, but local commands might find it valuable in spotting trends.

NARFs must be required to report FOD statistics, if not via the 3-M MDCS then by a computer system compatible with it.

The high percentage of unknown causes reported and the stated lack of ability of even highly qualified engineers to determine FOD causes with certainty casts doubt on the validity of the data collected for this study. It is believed, however, that the Navy has a good intuitive feel for the cause of FOD and is moving positively toward the reduction of FOD incidence. Further, it is believed that uncovering the cause of each FOD incidence with certainty would not be cost effective, and that it would require a valuable engine asset to be out of service for an unreasonable length of time.

Design of intakes with respect to height above ground and a minimal number of fasteners forward of the intakes would reduce the FOD incidence in future generations of aircraft.

Poor maintenance practices and housekeeping techniques are a factor in FOD but it is far too easy to blame them without looking deeper into the root problem. Management must not erroneously blame these factors if the root cause is the operating environment.

FOD incidence is about the same ashore and at sea. While local short term variance in FOD can be found at different



operating locations there is a strong positive relationship between locations, engine hours and FOD. The FODs will occur where the engine hours are generated.



FIGURE 1

TYPE FOD BY CATEGORY

TYPE FOD	NUMBER 1	PERCENT TOTAL
Unknown	507	44%
Aircraft/Miscellaneous Hardware	188	16%
Metallic Object	81	7%
Non Skid	74	6%
Internal Material Failure ²	69	6%
Gravel/Rocks/Concrete	61	5%
Tools	30	3%
Bird Strike ²	24	2%
Safety Pins	18	2%
Calfax Fasteners	18	2%
Ice ²	10	1%
Other	63	6%

¹No NARF Data Available

²No longer counted as FOD



FIGURE 2 SUMMARY OF FOD BY LOCATION 4

ENGINE (AIRCE	RAFT)	ASHORE	SHIP	UNKNOWN	TEST CELL ⁵	TOTAL
TF41A-2A/B	(A-7)	72	99 ¹	20	2	193
J52-P8B	(A-6)	92	83	4	1	180
J52-P408	(EA-6B)	30	26	1	0	57
T64GE-6B/413	(CH-53)	26	0	0	1	27
J79GE-8C/D	(RF-4B)	58 ²	17	7	1	83
J79GE-10A/B	(F-4)	129^{2}	46	15	0	190
TF30-P-414	(F-14)	121	151	5	1	278
TF30-P-408	(F-14)	16	0	0	0	16
TF34GE-400	(S-3)	26	23	0	0	49
J52-P6B	(A-4)	26 ³	0	0	1	27
J52-P-408	(A-4)	25 ³	0	0	0	25
J52-P8A/B	(A-4)	<u> 18</u> 3	0	_0	<u>0</u> _	18
TOTAL		639	445	52	7 ⁵	1143

¹²⁸ incidents in June/July/August 1980 from non skid/steel shot

²42 and 79 respectively from U.S. Marine units operated primarily ashore

Operated primarily ashore except for carrier qualifications in the training command

⁴No NARF incidents included in the data due to lack of reporting. The unknown category is included because the nature of the report made a determination of location impossible. This was most prevalent in AIMD reports for which no squadron report was available.

All NARFs run engines on test cells. This number would have been higher if NARF reporting were required.



APPENDIX I

SOURCE DATA COMPILATION



TF41A-2A/B	JUL 1979	JCN	PA5-916314					PD4-9196270								
		REF	RANGER 171351Z JUL 79	ATKRON 192 12310Z JUL 79	CORAL SEA 011710Z AUG 79	ATKRON 27 261800Z JUL 79	CORAL SEA 250022Z JUL 79	RANGER 171355Z JUL 79	LEMOORE 131600Z JUL 79	LEMOORE 072121Z AUG 79	:	:	= =	ATKRON 192 030247Z JUL 79	CUBI PT 082307Z AUG 79	
	47	HS HS		×	×		×	×						×		
	ARC	HS	×			×	<u> </u>		×	×	×	×	×		×	
		DISP,								REP	=	=	=		RFI	
		CAUSE	SMALL ROCKS	UNK	WING TIP PLASTIC LENS	INT MAT FAIL	FIBER GLASS FRAGMENTS	SELF-INDUCED	INT MAT FAIL	GRAVEL/CONCRETE	=	=	=	UNK	UNK	
		CAT	MAJ	MAJ	MIN	MAJ	MIN	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ		MAJ	
		S/N	142568	141937	141328	141985	141519	141925	141962	141354	141454	141495	142526	141937	141360	



TF41A-2A/B AUG 1979	JCN		PA3-923266				PC4-9220400												
	SHIP ST REF	ATKRON 94 310815Z AUG 79	KITTY HAWK 250415Z AUG 79	LEMOORE 102221Z SEP 79	= =	AMERICA 131245Z AUG 79	* 790814 5 09230	RANGER 031013Z AUG 79	CUBI PT 082307Z AUG 79	KITTY HAWK 071225Z AUG 79	CUBI PT 110147Z SEP 79	= =	=	:	:	KITTY HAWK 110234Z SEF 79			
	dIHS	×	×			×		×	×	×	×					×			
	SHORE			×	×												 	 	
	DISP /		BCM			BCM		BCU		BCM	BCM	AWP	AWP	AWP	AWP	BIM			
	CAUSE	SUSP NON-SKID	SUSP MTL OBJ	GRAVEL/CONCRETE	SML MTL OBJ	UNK	UNK	ROCK	DECK PAINT	UNK	NON-SKID	NON-SKID	UNK	SYNTHETIC MAT	METAL OBJ	UNK			
	CAT	MAJ	MAJ	MAJ	MAJ S			MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	11		
	S/N	141532	141594	141970	142507	141601	141300	141925	141355	141881	141531	141504	141928	141494	141589	141256			

* UNSATISFACTORY REPORT FILE, RECORD IDENT



TF41A-2A/B SEP 1979	JCN								·		
CELL	S/ REF	ATKRON 146 260505Z SEP 79	KITTYHAWK 061310Z OCT 79	CHINA LAKE 122329Z SEP 79	KITTYHAWK 250477Z SEP 79	LEMOORE 101821Z OCT 79	=	SAN DIEGO 061522Z SEP 79	ATKRON 87 101258Z SEP 79	* 790924 3 1401	
	SHIP										
I	ROHS			-	×				×	×	
		×	×	×		×	×	×			
	DISP					BCM	×				
	CAUSE	SUSP RAMP I	UNK	SUSP 7/16" SOCKET	SMALL HRD OBJ'S	SML MTL OBJ	LRG MTL OBJ	SUSP NON-SKID	UNK	UNK	
	CAT	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ			MAJ	
	S/N	142600	141484	142575	141281	142525	141415	141532	141929	141596	

* MISHAP REPORT FILE 1 RECORD IDENT



F41A-2A/B	OCT 1979	JCN										AC2-930226			AD7-9282301	PC4-9295746	PC4-929804	,					
		REF	ATKRON 146 182106Z OCT 79	ATKRON 27 232330Z OCT 79	KITTYHAWK 141336Z NOV 79	= =	LEMOORE 071821Z NOV 79	=	=	NIMITZ 041059Z OCT 79	ATKRON 87 051349Z OCT 79	ATKRON 174 291720Z OCT 79	ATKRON 83 251942Z OCT 79	ATKRON 83 311530Z OCT 79	* 791013 5 09215	* 791103 5 01505	** 791028 3 0501	KITTYHAWK 070001Z OCT 79	CUBI PT 082317Z NOV 79	=	= =	= =	
ELL	A A A A A A A A A A A A A A A A A A A	SHI THS OHS	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×					
		DISP			всм	BCM	BCM4	BCM4	BCM4									BCM	REP	REP	BCM	REP	
		CAUSE	10/32" SCREW	SUSP ROCK/CONCRETE	UNK	UNK	METAL OBJ	METAL OBJ	METAL OBJ	PORTION OF LP DUCT	UNK	BIRD STRIKE	INT MAT FAIL	UNK	INT MAT FAIL	SUSP DECK PAINT AND GRIT	NN	UNK	SAFETY WIRE	NON-METALLIC MAT	UNK	METALLIC MAT	
		CAT	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ				LNI			MTM		MAJ	MAJ	MAJ	MAJ	MAJ	
		S/N	141608	141477	141885	141491	141228	141343	141530	141223	141272	142611	141605	141248	141445	141355	141567	141466	141369	142368	141550	141948	

**WISHAP REPORT FILE, RECORD IDENT

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TF41A-2A/B	,6761 VON	JCN		PC4-926750	PF5-933413		AF4-930373								
TF4		REF	ATKRON 113 040038Z DEC 79	KITTY HAWK 250441Z NOV 79	CONSTELLATION 032135Z DEC 79	ATKRON 174 020701Z NOV 79	ATKRON 83 061330Z NOV 79	* 791128 5 20400	LEMOORE 102121Z DEC 79	:	:	:	:	CUBI PT 092347Z DEC 79	
	\d;	HS		×	×									×	
	BE	HS	×			×	×	×	×	×	×	×	×		
		DISP /						•	BCM 4	BCM 4	BCM 4	BCM 4	BCM 4	AWP	
		CAUSE	UNK	SUSP NON-SKID	TOWBAR GRIP LENGTHS	UNK	TOOL BOX & ENG TRIM BOX	UNK	UNK	SMALL METAL OBJECTS	UNK	UNK	UNK	NON-SKID	
		CAT	MAJ	MAJ	MAJ			MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	
		S/N	141610	142596	141542	141920	141917	142535	142598	142595	142569	141374	142521	141559	

* UNSATISFACTORY REPORT FILE, RECORD IDENT



TF41A-2A/B	DEC 1979	JCN	PJ3-9337314														
TF	DE	SF.	050302Z DEC 79	032034Z JAN 80	211600Z DEC 79	040038Z DEC 79	290642Z DEC 79	271014Z DEC 79	172230Z DEC 79	020419Z DEC 79	2Z JAN 80	=	=	=	:	=	271740Z DEC 79
777		REF	ON 192	" 113 03	" " 21	" 04	KITTY HAWK 29	ATKRON 122 27	" 113 17	" 81 02	LEMOORE 111822Z	=	=	=	=	:	CONSTELLATION
CETT	ORE ST	LI		×	×	×	×	X	×	×	H		×	×	×	×	×
		DISP															
							BCM	BCM									всм
		CAUSE D	UNK	INT MAT FAIL	BIRD STRIKE	UNK	SUSP NON-SKID BCM	BIRD STRIKE BCM	INT MAT FAIL	SUSP RIVET OR SCREW	SMALL METAL OBJ	:	NON-SKID	SMALL METAL OBJ	NON-SKID	NON-SKID	POP RIVETS BCM
			MAJ UNK	MAJ INT MAT FAIL	MAJ BIRD STRIKE	MAJ UNK			MAJ INT MAT FAIL	SUSP RIVET OR SCREW	MAJ SMALL METAL OBJ	=	MAJ NON-SKID	MAJ SMALL METAL OBJ	MAJ NON-SKID	MAJ NON-SKID	



TF41A-2A/B	JAN 1980	JCN		AC2-002540				
	ORE OF ST	REF	ATKRON 146 070215Z FEB 80	* 800125 3 0701	KITTY HAWK 121150Z FEB 80	LEMOORE 072121Z FEB 80	CONSTELLATION 042132Z FEB 80	
_	41	HS HS	×		×		×	
	JAC	HS		×				
		DISP	ВСМ		всм	BCM	ВСМ	
		CAUSE	SUSP METAL OBJ	UNK	UNK	UNK	UNK	
		CAT	MAJ		MAJ	MAJ	MAJ	
		S/N	141881	141382	141370	142593	141978	

* MISHAP REPORT FILE, RECORD IDENT



TF41A-2A/B FEB 1980	JCN	PF7-004803		PF7-006464		AE5-004418				
	REF	CORAL SEA 251442Z FEB 80	ATKRON 195 051833Z FEB 80	CORAL SEA 071214Z MAR 80	ATKRON 146 061906Z MAR 80	NIMITZ 151751Z FEB 80	LEMOORE 141350Z MAR 80	= =	:	
TE CET	SHI			×	×	×		×	×	
440	775		×				×			
	DISP					BCM				
	CAUSE	TOOL POUCH & TOOLS	METAL OBJECT	UNK	UNK	6" CRESCENT WRENCH	CONCRETE/GRAVEL	NON-SKID	NON-SKID	
	CAT	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	
	Ö	4	4							



TF41A-2A/B MAR 1980	JCN					PF7-006262		N65-0°86037			
	REF	NIMITZ 251753Z MAR 80	NIMITZ 301733Z MAR 80	NIMITZ 260925Z MAR 80	ATKRON 192 251845Z MAR 80	CORAL SEA 050554Z MAR 80	SARATOGA 281904Z MAR 80	* 800421 5 20400	* 800306 3 0401	* 800320 4 0401	
J. CET	SIL		Z	<u>z</u>	⋖	-		*	*	*	
d. 37	IHS	×	×	×		×	×			×	
140	OHS				×			×	×		
	DISP						BCM				
	CAUSE	UNK	SUSP MTL OBJ	PAPER & MASKING TAPE	BIRD STRIKE	TURN-UP SCREEN EYE BOLT ASSY	UNK	UNK	FLASHLIGHT	UNK	
	CAT	MAJ	MAJ	MIN	MIN	MAJ					
	S/N	141619	141579	141902	141587	142622	141372	141504	141957	141327	

* UNSATISFACTORY REPORT FILE, RECORD IDENT
** MISHAP REPORT FILE, RECORD IDENT



TF41A-2A/B APR 1980	JCN			N65-0886031	AB6-0107085	AE3-0099006							
	SO REF	ATKRON 146 211757Z APR 80	ATKRON 15 022131Z APR 80	JACKSONVILLE 151650Z APR 80	SARATOGA 291418Z APR 80	* 800417 5 21120							
CETT	THS	×	×	×	×	×							
	DISP /			REP			· · · · · · · · · · · · · · · · · · ·	·	 	 			
	CAUSE	SMALL NUT OR BOLT	UNK	UNK	UNK	INT MAT FAIL							
	CAT	<u></u>	ח			I .				 			
	S/N	68	142552	141317	141279	141333							

*UNSATISFACTORY REPORT FILE, RECORD IDENT



TF41A-2A/B	MAY 1980	JCN						AD5-0125381				
		REF	ATKRON 22 012118Z MAY 80	ATKRON 146 031509Z MAY 80	LEMOORE 150951Z MAY 80	LEMOORE 092322Z MAY 80	AIRTEVRON 5 080033Z MAY 80	ATKRON 66 131720Z MAY 80	SARATOGA 230732Z MAY 80	* 800519 5 19400		
TIET	47	TE				×		×	×			
\	JRE	PHS	×	×	×	_	×			×		
		DISP /	BCM 4		REP	REP	REP	EIR				
		CAUSE	GRAVEL	UNK	NON-SKID	SUSP CONCRETE	GRAVEL	INT MAT FAIL	UNK	UNK		* UNSATISFACTORY REPORT FILE, RECORD IDENT
		CAT	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ				SFACT
		S/N	141901	141256	141895	141352	142541	141990	141275	141569	•	* UNSAT



TF41A-2A/B JUN 1980	NOT.	OCN —					AD5-0125381																
ETT		REF	RANGER 030737Z JUN 80	ATKRON 12 220520Z JUN 80	RANGER 070747Z JUN 80	ATKRON 146 262115Z JUN 80	EISENHOWER 060502Z JUN 80	ATKRON 174 231633Z JUN 80	:	= =	:	= =	=	ATKRON 15 241700Z JUN 80	ATKRON 174 251645Z JUN 80 .	=	:	:	:	ATKRON 87 262000Z JUN 80	SARATOGA 301609Z JUN 80	EISENHOWER 031818Z APR 80	
\	AIH	2/E	×	×	~		×	×	×	×	×	×	×	×	×	×	×	×	×		×	×	
_	HORE	15			×	×														×			
									-														
		DISP		EIR	BCM	BCM	EIR	AWM	AWM		AWM	AWM	AWM		AWM	AWM	AWM		AWM	AWM		BCM	
		CAUSE DIS	NON-SKID	SUSP INT MAT FAIL EIR	NON-SKID BCM	TIRE TREAD BCM	INT MAT FAIL EIR	STEEL SHOT	" " AWM	=	" " AWM	" " AWM	" " AWM	UNK	STEEL SHOT	" " AWM	" " AWM	=	AWM	SUSP CONCRETE AWM	INT MAT FAIL	INT MAT FAIL BCM	
			MAJ NON-SKID						=		=	=	=	UNK		Ξ	=		=		INT MAT FAIL		



TF41A-2A/B JUL 1980	JCN											
CELL TF41) REF	LEMOORE 180849Z JUL 80	=	:	ATKRON 25 022040Z JUL 80	" 113 231630Z JUL 80	LEMOORE 221349Z AUG 80	CUBI PT 060007Z AUG 80	ATKRON 87 011820Z JUL 80	" 86 031700Z JUL 80	KENNEDY 071819Z JUL 80	
	SHIP											
JE -	HOHS	×	×	×	×	×	×	×		×	×	
		····-			· · ·				×			
	DISP	всм4	всм	BCM	BCM4	всмз	всмз	BCM	I/W	AWM	BCM	
	CAUSE	NON-SKID	NON-SKID	NON-SKID	SUSP NON-SKID	NON-SKID	NON-SKID	NON-SKID	UNK	STEEL SHOT	SCREW SHANK	
	CAT	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ			
	S/N	141341	141278	141949	141508	141610	141606	141974	141958	141402	142530	



TF41A-2A/B	AUG 1980	JCN													WA5-0241030	
		A/ REF	LEMOORE 181249Z SEP 80	= =	= =	:	=	=	=	SARATOGA 021802Z AUG 80	ATKRON 82 081130Z AUG 80	ATKRON 87 181620Z AUG 80	NIMITZ 222143Z AUG 80	NIMITZ 261223Z AUG 80	* 800916 5 21580	
_	ST C	HS HS	×	×	×	×	×	×	×	×			×	×		
		DISP /	BCM4	M/I	I/W	I/W	M/I	всм	M/I		×	<u>×</u>			·-	
		CAUSE	NON-SKID	NON-SKID	NON-SKID	NON-SKID	NON-SKID	NON-SKID	NON-SKID	BUMPER PAD MATERIAL	INTAKE SCREEN STRAP	UNK	SUSP MTL OBJ	RIVETS	UNK	*UNSATISFACTORY REPORT FILE, RECORD IDENT
		CAT	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ							SFACTOR
		S/N	141899	142590	142614	141482	141360	141377	141346	141287	141510	141397	141457	141373	141511	*UNSATI



TF41A-2A/B SEP 1980	JCN					
	SHIP SHIP FES REF	RANGER 090559Z OCT 80	RANGER 282323Z SEP 80	ATKRON 87 101805Z SEP 80	* 810106 0 0101	
	dIH2	×	×			
5	175			×	×	
	DISP		BCM			
	CAUSE	SHRADER VALVE CAP	UNK	UNK	UNK	
	CAT	MIN	MIN			
	S/N	141235	141556	142505	141540	

* FLIGHT MISHAP REPORT, RECORD IDENT

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TF41A-2A/B	980	JCN						
-41A-	OCT 1980							
TTE	70	TES REF	INDEPENDENCE 041453Z OCT 80	ATKRON 174 211431Z OCT 80	ATKRON 174 211730Z OCT 80	ATKRON 83 222301Z OCT 80	ATKRON 174 231526Z OCT 80	
_		SHI						
\	E E	IOHS	×	×	×	×	×	
		DISP	BCM	BCM		M/I	BCM	
		CAUSE			INT MAT FAIL	INT MAT FAIL		
			DROE	UNK	INT	INT	UNK	
		FAN						
		N/ S	141471	142597	141905	141938	141339	



TF41A-2A/B NOV 1980	JCN					
	REF	ATKRON 12 100953Z NOV 80	ATKRON 87 102300Z NOV 80	ATKRON 46 150137Z NOV 80	ATKRON 81 231259Z NOV 80	
TTAD I	ZEZ	X	A	X A1	X AT	
10	DISP /SHO		×			
	CAUSE	UNK	UNK	UNK	EXT MAT FAIL	
	CAT	MIM				
	S/N	141296	142546	141910	141361	



A/B	0	JCN	
TF41A-2A/B	198	٦	·
TF4	DEC		
			08 08
			DEC DEC
			502
		REF	ATKRON 174 0117472 DEC 80 ATKRON 82 0414502 DEC 80
			174
/			KRON KRON
TTG	TO I	TES	ATI
/	d	SHI	
/	RE	OHS	× ×
		DISP/	
		DI	
		CAUSE	
		CA	
			ON K
		CAT	
			950
		S/N	141950



J52-P8A/B	1979	JCN	PF4-915817	PJ5-915976	PJS-915660							AE4-9197312	
J52	NOC		79	97 NUT	67 NUL	2 JUL 79	=	=	=	=	=		
		REF	RANGER 111256Z JUN	ATKRON 196 082245Z	" 072144Z	ISL 102328Z JUL 79	2	Ξ	=	=	=	5 5 14370	
TTA		TES		ATKRON 1	=	WHIDBEY	=	=	:	=	=	* 790725	
/	A A A	THS	×	×	×	×	×	×	×	×	×	×	
		DISP /	BCM	RFI		M/I	AWP	I/W	I/W	RFI	M/I		
		CAUSE	BOLT	PEBBLES	SML FOREIGN OBJ	UNK	UNK	UNK	UNK	UNK	UNK	BULLET ASSY BRACKET	
		CAT	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ		
		S/N	601309	650632	661422	650676	678280	661469	677194	677534	678183	680099	

*UNSATISFACTORY REPORT FILE, RECORD IDENT



J52-P8A/B JUL 1979	JCN				PF4-9188A01							PB3-9191303	PB3-9202848			
CELL) REF	HAMS 12 121124Z JUL 79	ALAMEDA 302106Z JUL 79	ATSUGI 190536Z JUL 79	RANGER 150535Z JUL 79	WHIDBEY ISL 091914Z AUG 79	= =	HAMS 13 092341Z AUG 79	VMA AW 332 210702Z AUG 79	ATKRON 128 291658Z AUG 79	ATKRON 42 171605Z JUL 79	* 790802 5 07250	* 790802 5 07260	KITTY HAWK 090250Z JUL 79	MIDWAY 050844Z JUL 79	
d Ju	ZHI		×		×						×		×	×	×	
RE	OHS	×		×		×	×	×	×	×		×				
	DISP /	BCM		RFI		M/I	M/I	BCM				-		BCM	BCM	
	CAUSE	NAIL	INT MAT FAIL	INT MAT FAIL	7/16" NUT	UNK	UNK	COMP BL VALVE PINS	ROCK	UNK	UNK	UNK	UNK	NON-SKID	NON-SKID	
	CAT	MAJ	MAJ	MAJ	MAJ	MIM		MAJ	MAJ	MAJ			MAJ	MAJ	MAJ	
	S/N	661519	661549	660665	661029	67077	677191	677415	677380	669099	677478	906099	677462	677564	677242	

* UNSATISFACTORY REPORT FILE, RECORD IDENT



J52-P8A/B AUG 1979	JCN	FA9	PC5-922305	WC1						мв3-9213488	PC5-9222984	
J52-AUG	REF	332 210702Z AUG 79	ATKRON 95 170739Z AUG 79	ALAMEDA 142104Z AUG 79	ISL 0723192 SEP 79	=	=	=	=	5 12125	5 16425	
TO CEPT	SHI	VMA AW		ALAMEDA	WHIDBEY	=	=	:	=	* 790808	* 790821	
RE	OHS	×	×	×	×	×	×	×	×	×	×	
	DISP		AWP		M/I	RFI	M/I	RFI	RFI			
	CAUSE	ROCK	BROKEN BLEED VALVE PINS	NIA dId	UNK	UNK	UNK	UNK	UNK	BIRD	UNK	
	CAT	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MIN	MIM	
	S/N	67380	677549	677533	650635	660805	677196	677386	677556	677268	661093	

*UNSATISFACTORY REPORT FILE, RECORD IDENT



J52-P8A/B SEP 1979		JCN		PJ5-926316					,	PB3-9299A0Z	PB3-9303734		PH5-9269002		
TTTT	LS	REF	RANGER 070935Z SEP 79	CORAL SEA 250520Z SEP 79	KITTY HAWK 030240Z OCT 79	HAMS 12 120755Z OCT 79	WHIDBEY ISL 032006Z OCT 79	:	CORAL SEA 050342Z NOV 79	KITTY HAWK 141336Z NOV 79	:	=		CUBI PT 110147Z SEP 79	
	dI T	HS HS	×	×	×				×	×	×	×	×		
	JAC)HS				×	×	×						×	
		DISP	всм				M/I	AWP	всм	всм	REP	BCM		AWP	
		CAUSE	UNK	SUSP BOLT	SUSP FLT DECK FOD	UNK	UNK	UNK	WASHER	SUSP NON-SKID	UNK	UNK	BULLET ASSY BRACKET	METAL OB	
		CAT	MAJ	MAJ	MAJ		MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MIN	MAJ	
		S/N	660654	677541	678499	9081399	660662	677126	661028	677154	677441	661179	661233	661512	

* UNSATISFACTORY REPORT FILE, RECORD IDENT



J52-P8A/B OCT 1979	JCN		PJ5-926527	PJ5-927414											
	REF	HAMS 13 092116Z NOV 79	CORAL SEA 082244Z NOV 79	= =	WHIDBEY ISL 090030Z NOV 79	:	:	HAMS 24 090240Z NOV 79	ATKRON 75 102317Z OCT 79	NIMITZ 110732Z OCT 79	ATKRON 42 111805Z OCT 79	ATKRON 176 140047Z OCT 79	* 791103 5 08150	KITTY HAWK 700001Z OCT 79	
L CETT	SHI							×							
RE	OHS	×	×	×	×	×	×		×	×	×	×	×	×	
	DISP /	BCM >	ВСМ	REP	I/W	RFI 3	M/I	BCM						ВСМ	
	CAUSE	UNK	UNK	SUSP NON-SKID	UNK	UNK	UNK	UNK	SUSP INT MAT FAIL	UNK	UNK	UNK	SUSP NON-SKID	UNK	
	CAT	MAJ	MAJ	MIN	MAJ	MAJ	MAJ	MAJ		,			MAJ	MAJ	
	S/N	661523	677320	677103	661422	661507	677436	677164	677186	650614	661229	677545	677441	661073	

* UNSATISFACTORY REPORT FILE, RECORD IDENT



J52-P8A/B NOV 1979		JCN				AD4-932939	AB4-931202			FB4-	
TTAG	A I I ST ST	S S F F REF	ATKRON 95 101935Z DEC	" 128 272116Z NOV 79	" 165 292006Z NOV 79	* 791125 4 0101	X NIMITZ 161632Z NOV 79	x NIMITZ 161633Z NOV 79	ATKRON 65 270419Z NOV 79	* 791203 3 0201	
		DISP /	×	×	×	×			×	×	4
		CAUSE	RAGS	SUSP BOLT	UNK	OAT PROBE COVER	UNK	BULLET ASSY BRKT & SAFETY WIRE	TEMP PROBE COVER RETAINING PIN	BIRD	BIRD
		CAT	MAJ	MIN	MAJ	MAJ					
		N/S	650640	677315	677303	661185	677474	677076	661186	661107	661107

* MISHAP REPORT, RECORD IDENT



J52-P8A/B DEC 1979	JCN						PF4-934562	GGB-934805	PC5-933852	AC3-934641			
CET	REF	ATKRON 128 072328Z DEC 79	CONSTELLATION 040252Z DEC 79	ATKRON 127 101729Z DEC 79	" 128 212331Z DEC 79	" 145 131841Z DEC 79	:	VMA AW 121 192348Z DEC 79	ATKRON 95 101936Z DEC 79	" 42 172200Z DEC 79	" "172205Z DEC 79	NIMITZ 260813Z DEC 79	
/ 3	ANORS AIHS	×	×	×	×	×	×	×	×	×	×	×	
) dstu		ВСМ										
	- ANIGE		O MTL OBJ	UNK	ICE	ICE	ICE	UNK	MAIN LANDING GEAR PIN	IFR DROGUE	INT MAT FAILURE	SUSP. NON-SKID	
	Ę	MA,T	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ				
	3	5/ IN 660840	677218	661090	661646	677217	660818	808099	660944	677475	677325	660726	



J52-P8A/B JAN 1980	JCN		PB3-936558	PC5-002376	PC5-002372			•	PJ5-001145	PJ5-001575	PB3-0031439			AF5-002539			FA9-002997				
	A F S REF	KITTY HAWK 081131Z JAN 80	" 072258Z JAN 80	ATKRON 95 260222Z JAN 80	" 260600Z JAN 80	=	ATKRON 128 051607Z FEB 80	" 165 301603Z JAN 80	CORAL SEA 130410Z JAN 80	" 211414Z JAN 80	KITTY HAWK 090850Z FEB 80	COMMATWING 1 081845Z JAN 80	ATKRON 65 13702Z JAN 80	" 85 271435Z JAN 80	:	* 800106 3 0301	* 800129 3 0701	** 800125 5 16120			
	SHORE	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×			
	DISP		· - <u>-</u>				I/W													<u> </u>	
	CAUSE	SCREW	UNK	UNK	UNK	UNK	UNK	UNK	RAG	UNK	UNK	UNK	UNK	NOSE TIRE TREAD	UNK	UNK	UNK	SUSP BOLT			
		S																			
	САТ	-	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ						MAJ				

* MISHAP REPORT FILE, RECORD IDENT
** UNSATISFACTORY REPORT FILE, RECORD IDENT

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J52-P8A/B	FEB 1980	N L	- כני									FA9-005245	
	73	AIH AIN	F	X NIMITZ 240816Z FEB 80	X ATKRON 95 041635Z FEB 80	X " 85 051319Z FEB 80	AWM X " 42 081200Z FEB 80	RFI X " 65 092047Z FEB 80	RFI X " " 092049Z FEB 80	RFI X " " "	X NIMITZ 240816Z FEB 80	x * 800221 3 1101	
			T	LI UNK	JUNK NNK	NOSE TIRE TREAD	UNK	UNK	CE	ICW	UNK	AURAL PROTECTORS	
			CAT	MAJ	MAJ								

* MISHAP REPORT FILE, RECORD IDENT

S/N



J52-P8A/B	MAR 1980	JCN	GF7-0065174		GF.7-0063A00			AF5-008910									
TTS	75	HIP FEST REF	13 080		" 060010Z MAR 80	ATKRON 42 192010Z MAR 80	" 85 310145Z MAR 80	* 800329 3 0201									
_	_	WSII OHID		_								 	 		 		
	E	AOHS ATHS	7 ,		×	×	×	×	 	 		 		 , -	 	 	-
		DISP	1010														
			CAUSE	ON A	INT MAT FAIL	UNK	UNK	UNK									
		E		MAJ	MAJ												
			S/N	677438	661334	677162	677254	677164									

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			,														
J52-P8A/B	APR 1980	JCN															
		A S REF		HIMITZ 080628Z APR 80	RANGER 011849Z MAY 80	CORAL SEA 010904Z MAY 80	" 211406Z APR 80	WHIDBEY ISL 162146Z MAY 80	:	= =	:	=	ATKRON 42 082100Z APR 80	" 65 201710Z APR 80	:	* 800519 5 23450	
//	_	HIP												×	×		
/	E	HOH	_	× —	×	×	×	×	×	×	×	×	×			×	
			`—											1 7	1 7		
		DISP			BCM	BCM	BCM	M/I	M/I					BCM	BCM		
		7 11 C		UNK	SUSP METAL OBJ	ENG BULLET ASSY	NOSE GR DWN LOCK SAFETY PIN	WIRE	WIRE	UNK	GRAVEL	WIRE	UNK	SUSP ICE	SUSP ICE	BULLET ASSY BRACKET	
		E	CAI		MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ				MAJ	
			N/S	661439	661174	660772	677152	650572	660878	996099	661252	601409	661582	677382	677581	160199	

* UNSATISFACTORY REPORT FILE, RECORD IDENT



J52-P8A/B		JCN	P22-0133442
CELLY J52-		REF	CTV 70 160330Z MAY 80 CONSTELLATION 050338Z MAY 80 AIRTEVRON 5 192017Z MAY 80
	47	HS	
	J. B. E.	HS	× × · · · · · · · · · · · · · · · · · ·
		DISP /	
		DI	DE LOS CONTRACTOR OF THE PROPERTY OF THE PROPE
		CAUSE	UNK BULLET ASSY CLIP
		CAT	MAJ MAJ
		S/N	661531 661091



J52-P8A/B	JUN 1980	JCN											
TT	T 3	SHOR SHIP	RANGER 080459 JUN 80	ATKRON 95 112130Z JUN 80	" 65 180843Z JUN 80	RANGER 180927Z JUN 80	ATKRON 65 260657Z JUN 80	" 34 152159Z JUN 80	NORVA 242106Z JUN 80	ATKRON 35 241945Z JUN 80	" 42 251210Z JUN 80	" " 261216Z JUN 80	
_		TES											
\	E	HOHS	×			×	×	×	×				
		P / C		×	×					×	×	×	
		DISP	BCM	M/I	BCM	BCM	BCM	BCM		AWM	M/I	AWM	
		CAUSE	TNT MAT FAIT,	WIRE	UNK	BOLT	UNK	RAG	UNK	UNK	UNK	UNK	
		CAT	T.AM	MAJ	MAJ	MAJ	MAJ						
		s/N	661015	677148	660718	661624	696099	660921	677525	660831	226099	661371	



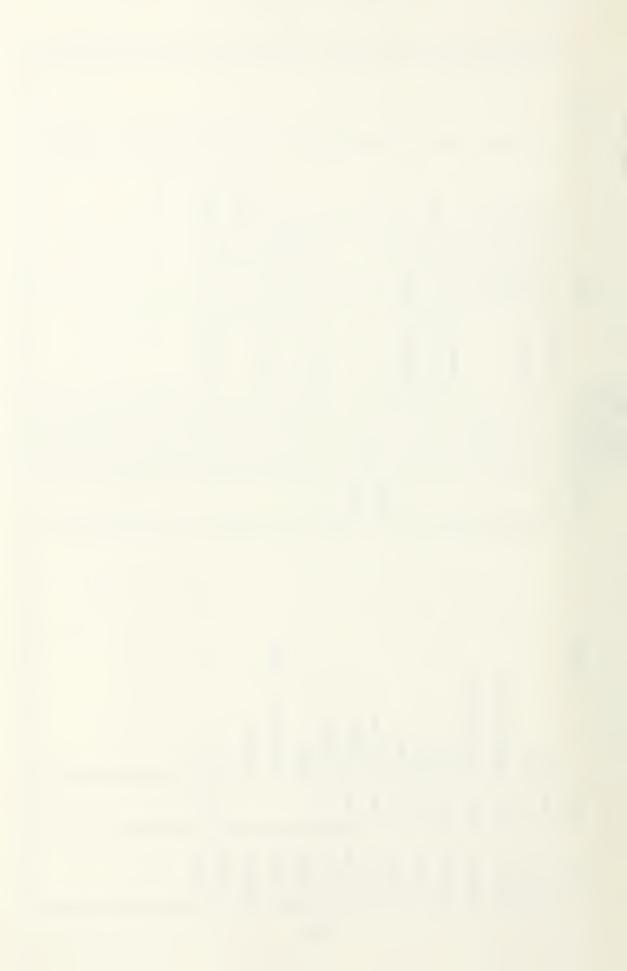
JUL 1980	JCN													
CE	$\begin{pmatrix} F_1 \\ F_2 \\ F_4 \end{pmatrix}$ REF	AMERDON 95 181645Z .TH. 80		" 128 261607Z JUL 80	" 65 300629Z JUL 80	=======================================	" 95 050015Z AUG 80	MIDWAY 191814Z JUL 80	ATKRON 128 291807Z JUL 80	" 311807Z JUL 80	" 176 142121Z JUL 80	SARATOGA 212128Z JUL 80	ATKRON 42 291913Z JUL 80	
				~	×	×				×	×	×		
E	ROHS	>	•	×			×	×	×				×	
	DISP /			:.	ВСМ	BCM			N/I		•			
	CAUSE		UNK	SUSP NON-SKID	SUSP NON-SKID	SUSP NON-SKID	BLACK TAR-LIKE SUBSTANCE	UNK	SCREW	SUSP NON-SKID	UNK	CANOPY JETTISON SAFETY PIN	BIRD	
	CAT		MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ				
	Z/		677309	660983	661357	661408	661409	67716	660099	677061	677414	661265	677410	

J52-P8A/B



SEP 1980	JCN																		
73	(F) REF	EISENHOWER 040437Z SEP 80	ATKRON 52 192356Z SEP 80	" " 261532Z SEP 80	" " 221448Z SEP 80	MIDWAY 111448Z SEP 80	VMA AW 121 192109Z SEP 80	WHIDBEY 092041Z OCT 80	= = =	= = =	=	NIMITZ 131110Z SEP 80	" 141819Z SEP 80	FITRON 101 151310Z SEP 80	" 143 160522Z SEP 80	EISENHOWER 161120Z SEP 80			
_	AND		×	×	×	×						×	×		×	×			
	DISP (S	BCM					×	I/W	AWP	AWP	M/I			×					
	DI							⊢		A	H						 	 	
	CAUSE	UNK	UNK	SML MTL OBJ	SML MTL OBJ	UNK	UNK	WOOD	RUBBER	GRAVEL	GRAVEL	UNK	CHAIN BAG STRAP	CALFAX	UNK	. ONK			
	CAT	MAJ	MIN	MAJ	MAJ	MAJ	MIM	MAJ	MAJ	MAJ	MAJ				MIN	MAJ			
	S/N	677576	650646	661343	661077	677578	677310	650622	661174	661404	677415	650645	677372	695404	679340	980289			

J52-P8A/B



J52-P8A/B OCT 1980		JCN			_		<u>-</u> -				PE8	
TTA	J. 5	REF	EISENHOWER 060705Z OCT 80	ATKRON 34 061803Z OCT 80	" 42 061838Z OCT 80	EISENHOWER 090615Z OCT 80	ATKRON 34 251325Z OCT 80	FITRON 143 251345Z OCT 80	ATKRON 85 291936Z OCT 80	" 42 312025Z OCT 80	* 801125 3 050;	
_	ORE	15/1	×	×		×	×	×	×			
	100				×					×	×	
		DISP	BCM			ВСМ	BCM 7			AWM		
		CAUSE	UNK	BLEED VALVE STOP PIP	UNK	UNK	STOPPINS	SUSP FASTENER	UNK	UNK	BIRD	FILE, RECORD IDENT
		CAT	MAJ			MAJ						REPORT
		S/N	650654	660594	671779	660693	650566	687144	677460	661426	660841	* MISHAP REPORT FILE,



	1-	,						
J52-P8A/B NOV 1980	OCN OCN			·n	-			
<u>.</u>	YEF.	ATKRON 85 051610Z NOV 80	" 42 061800Z NOV 80	EISENHOWER 081312Z NOV 80	ATKRON 176 112157 NOV 80	" 42 132100Z NOV 80	" 85 251811Z NOV 80	
EST CEL	0/12/	×		×			×	
HORE	S		×		×	×		
	DISP /	BCM 7	AWM		RFI	···	 -	
	CAUSE	UNK	EXT MAT FAIL	INT MAT FAIL	VANCO LIGHT TIP	UNK	UNK	
	CAT			MAJ	MAJ			
	S/N	660820	660937	677360	661347	677124	650607	



		1					
,	ŋ	Z					
, 400	J32-F8A/B DEC 1980	JCN				FB4	
C U	DEC						
			C 80	C 80	C 80	EC 80	
			Z DE	Z DE	Z DE	.2Z D	
		REF	80714	75 111602Z DEC 80	30832	17171	
		R	ATKRON 176 080714Z DEC	75 1	176 130832Z DEC 80	VMAT AW 202 171712Z DEC 80	
			RON]	=	:	T AW	
TTS	73	SHI	ATK			VMA	
\		THS	×				
	SE	TOHS		×	×	×	
		DISP					
		Ω					
		CAUSE		INS			
		CAL		VE P			
			3.R	VAL			
			WASHER	BLEED VALVE PINS	UNK	BIRD	
		H					
		CAT			MAJ		
		S/N	661410	661167	677562	677165	
		S	661	661	677	677	



J52-P408	JUN-JUL 1979		JCN	P65-9157372		٠	P65-915930	P65-916517				P679213347	P65-919838				
		12 ST	// REF	KITTY HAWK 162201Z JUN 79	TACLE RON 133 192306Z JUN 79	" 192307Z JUN 79	* 790608 3 0101	* 790614 3 0201	YUMA 061429Z JUN 79	RANGER 040245Z JUN 79	RANGER 130357Z JUL 79	RANGER 201427Z JUL 79	KITTY HAWK 220723Z JUL 79	WHIDBEY ISL 091914Z AUG 79	=	KITTY HAWK 090250Z JUL 79	
\	_	41	HS HS	×			×	×		×	×	×	×			×	
		ARC.	HS		×	×			×		 			×	×		
			DISP /								 		7		=.		
			DI				BCM	BCM	BCM	RFI	 BCM	RFI					
			CAUSE	UNK	UNK	UNK	SUSP NON-SKID	SUSP NON-SKID	UNK	UNK	UNK	LOCKWIRE	SUSP METAL OBJ	UNK	UNK	SUSP NON-SKID	
			CAT	MIN	MAJ	MAJ		MAJ	MAJ	MIN	MAJ	MAJ	MAJ	MIN	MIM	MAJ	
			S/N	678245	678351	678280	678493	678226	678451	678199	678365	678480	678157	678270	678443	678245	
				-							 						

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J52-P408	AUG-OCT 1979	JCN							P65-925429			P65-927815		
), REF	HAMS 13 092341Z AUG 79	HAMS 12 090737Z AUG 79	RANGER 181107Z AUG 79	HAMS 13 062313Z SEP 79	=	ATKRON 205 311710Z AUG 79	CUBI PT 220157Z OCT 79		WHIDBEI ISE OSCOOL OCI	KITTY HAWK 210503Z OCT 79	TACELRON 133 010446Z OCT 79	
_	d A	ZHI			×							×	×	
	10	775	×	×		×	×	×	×	-;	×			
		DISP	BCM	BCM	BCM	BCM	BCM		REP		AMP			
		CAUSE	BIRD	UNK	SUSP TAPE BALL	GRAVEL	EXT MAT FAIL	UNK	METINI OBI	oo ruttu	UNK	INT MAT FAIL	UNK	
		CAT	MAJ	MAJ	MAJ	MAJ	MAJ		F 2	CWI-	MAJ	MAJ		
		S/N	678322	678550	678532	678447	678390	664238	0000	664010	678191	678392	678236	



J52-P408 NOV-DEC 1979 JCN	оно-934428
SHIP OF SHIP REF	TACELRON 129 050054Z JAN 80 " " 040556Z JAN 80 NIMITZ 221430Z DEC 79 ATKRON 174 191914Z DEC 79
TEST	
SHORE	×
DISP	
CAUSE	SAFETY PIN
CAT	MAJ MAJ
Z V	678239 678507 678450 664228



J52-P408	JAN/FEB/MAR 1980	JCN	P66-0016442	P68-002849	P65-000602					 		
TTT	JAN JAN JAN JAN	$DISP / \frac{R}{G} / \frac{R}{G} / \frac{R}{E} $ REF	X TACELRON 136 182239Z JAN 80	X " 138 310123Z JAN 80	X KITTY HAWK 120618Z JAN80	x * 801022 3 0101	 X	X TACELRON 133 061019Z FEB 80	X " 061047Z FEB 80	X TACELRON 137 012200Z APR 80	x " 130 260115Z MAR 80	
		CAUSE	SUSP STONE OR BOLT	RIVET HEAD	SUSP NON-SKID	SAFETY PIN & RFB FLAG	 INT MAT FAIL	UNK	UNK	UNK	SUSP GRAVEL	* FLIGHT MISHAP REPORT, RECORD IDENT
		CAT	MAJ	MAJ	MAJ		MAJ			MAJ	MAJ	MISH
		S/N	696924	678305	678317	678241	678214	678169	678427	678475	618599	* FLIGHT



	30	,-									
	APR/MAY/JUN 1980	JCN									
J52-P408	/MAY/	J.									
ETT	0 17.0	REF	NIMITZ 041744Z MAY 80	TACELRON 138 071551Z APR 80	WHIDBEY ISL 162146Z MAY 80	= = =	TACELRON 135 092233Z MAY 80	EISENHOWER 090633Z JUL 80	TACELRON 137 181700Z JUN 80	ALAMEDA 101441Z JUL 80	
	\d'\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	HS	×					×			
	BE	PHS		×	×	×	×		×		
		DISP	всм		M/I	M/I		BCM		всм	
		CAUSE	TOOL	×	METAL OBJ	WIRE	×	IK	IK	Ж	
		_	TO	UNK	ME	WI	UNK	UNK	UNK	UNK	
		CAT	MAJ	MAJ	MAJ	MAJ	MIM	MAJ	MAJ	MAJ	
		S/N	678405	678174	678454	678522	678475	678316	678428	696915	



	1980	1-								,	
408	S/90v	JCN									
/ \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		S/F/	TACELRON 129 171606Z JUL 80	EISENHOWER 310507Z JUL 80	TACELRON 133 162037Z JUL 80	EISENHOWER 090633Z JUL 80	TACELRON 129 121636Z AUG 80	X EISENHOWER 120744Z SEP 80	X TACELRON 132 161708Z SEP 80	X RANGER 231227Z SEP 80	
\	HORE	15	×	×	×	×	×				
		DISP /					AWP	ВСМ		BCM	
		CAUSE	INT MAT FAIL	INT MAT FAIL	GRAVEL	UNK	GRAVEL	UNK	UNK	e/8" or 5/16" NUT	
		CAT	MAJ	MAJ		MAJ	MAJ	MAJ	MIN	MAJ	
		S/N	678336	678503	678642	678316	678279	678191	678537	678437	



08		
J52-P408 OCT/NOV/DEC 1980	JCN	FA5-029560 FAG-029659
CETT	a/ REF	TACELRON 138 061759Z OCT 80 * 801020 3 0201 * 801022 3 0101 TACELRON 130 041227Z DEC 80
d.	IHC	× × ×
4. A.	OHS	× × × ×
	SP/	
	DISP	BCM
	CAUSE	SAFETY PIN WITH FLAG UNK RACK SAFETY PIN WITH FLAG UNK
	CAT	
	S/N	678190 678417 696904 678241 678522



T64GE-6B	JUN-DEC 1979	JCN			
TTI		REF	HMH 462 291858Z JUN 79 HAMS 16 082346Z JUN 79	HMH 462 202303Z DEC 79	
	47	TE	×		
\	AAC	HO			
		P / 6	×	×	
		DISP		B C W	
		CAUSE	UNK UNK	INT MAT FAIL	
		CAT	MAJ	MAJ	
		S/N	262067 262176	262322	



T64GE-6B	JAN-DEC 1980	JCN																
TTA	0	REF	HMH 462 090341Z FEB 80	HMT 301 181742Z JAN 80	HMH 361 031716Z MAR 80	HMT 301 101819Z MAR 80	" " 281804Z FEB 80	BECCCEC 678	HMH 462 0/222/2 MAK 60	HMH 361 102300Z JUL 80	" 363 142351Z JUL 80	" 252317Z AUG 80	" 361 102300Z JUL 80	" 363 072314Z AUG 80	" " 142350Z JUL 80	" 042316Z AUG 80		
TTI	47	THE								 							 	
\) BE	HS	×	×	×	×	×		×	 ×	×	×	×	×	×	 ×	 	
		DISP /		AWP						 BCM	BCM			AWP	I/W	I/W		
		CAUSE	UNK	UNK	SUSP INT FAIL	UNK	UNK		12" ELEC WIRE	SML METAL OBJ	UNK	UNK	SML METAL OBJ	INT MAT FAIL	UNK	METAL OBJ		
		CAT	MAJ	MAJ	MAJ	MAJ	MAJ		MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ		
		S/N	262301	262058	262298	262258	262390		262155	262290	262061	262043	262290	262196	262043	262069		



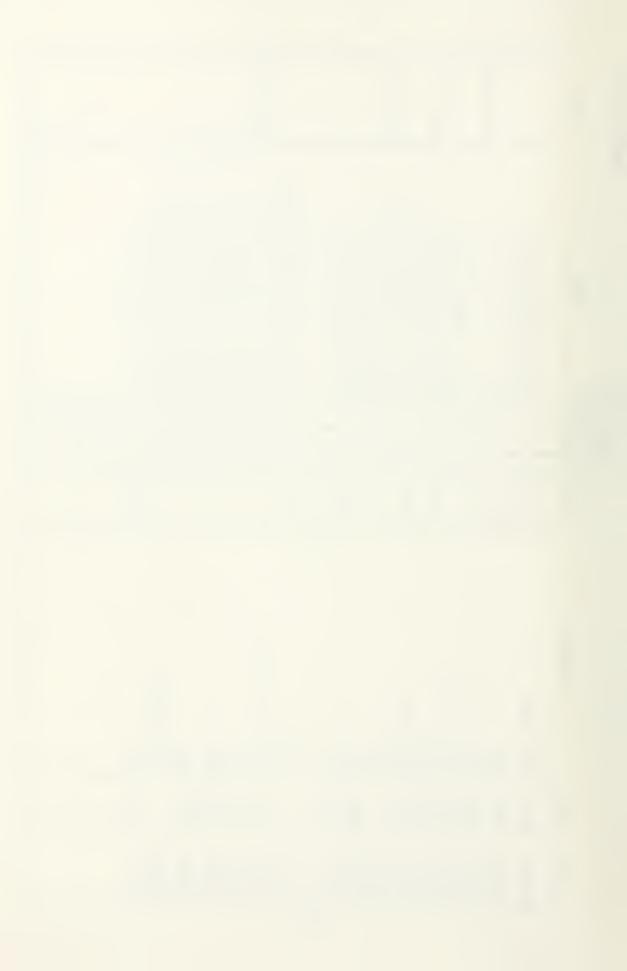
T64GE-413	JCN													
TTA	SHIP ST REF	НМН 361 270830Z AUG 79	нмн 361 070841Z NOV 79	HMM 165 232120Z NOV 79	" " 112230Z NOV 79	HMH 361 070842Z NOV 79	HAMS 24 050206Z DEC 79	HMH 363 200757Z DEC 79	" "180837Z DEC 79	HMH 362 161136Z JAN 80	нмн 463 1721202 аРR 80	HMH 363 202322Z AUG 80		
	TEST													
\	SHORE	×	×	×	×	×	×	×	×	 ×	×	×		
	DISP /			BCM	REP		AWP	AWP	BCM			всм	,	
	CAUSE	SUSP EXT MAT FAIL	SUSP INT MAT FAIL	UNK	SUSP PEBBLES	EXT MAT FAIL	UNK	INT MAT FAIL	UNK	UNK	SUSP INT MAT FAIL	METAL PARTICLES FROM GEAR BOX		
	CAT	MAJ		MAJ	MAJ	MIN	MAJ	MAJ	MAJ		MAJ			
	S/N	264320	264226	264279	264322	264401	264237	264226	264233	264150	264291	264405		

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J79GE-8C/D	JUN-AUG 1979	JCN			GFB-915490		GFB-920544		SBO-915775				GE7-923543							
379		REF	YUMA 052054Z JUL 79	MAG 11 102357Z JUL 79	= =	MAG 11 312054Z JUL 79	VMFB 3 252012Z JUL 79	VMFB 314 202156Z JUL 79	WASH D.C. 031401Z JUL 79	YUMA 061429Z JUN 79	YUMA 021421Z AUG 79	VMFB 3 DET 2 300639Z AUG 79	VMFA 314 282305Z AUG 79	VMFA 531 160126Z AUG 79	VMFA 314 062252Z AUG 79	VMFA 314 061748Z AUG 79	FITRON 171 132024Z AUG 79	HAMS 15 120242Z SEP 79		
	\d'.	TES										 							 	
\	BE	DHS			<u>×</u>	·			×			 					×		 	
			×	×		×	×	×		×	×	 ×	×	×	×	×		×	 	
		DISP	BCM	BCM	BCM		BCM	BCM		BCM	BCM	BCM						BCM		
		CAUSE	SUSP BOLT	UNK	UNK	10/32" SCREW	BOLT	SAFETY PIN	UNK	UNK	UNK	SCREWS	SUSP INT MAT FAIL	UNK	UNK	UNK	BIRD STRIKE	UNK		
		CAT	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ		MAJ	MAJ		MAJ	MAJ	MIM	MAJ		MAJ		
		S/N	401608	421489	421863	421140	401912	421016	401413	401988	401127	421013	401737	401955	421835	401667	401681	401132		



J79GE-8C/D	SEP/OCT 1979	JCN			SBO-9265341										BBO-927508					
	SEP C SEP	REF	MAG 11 102259Z SEP 79	=	* 791005 5 21000	VMFP 3 051856Z OCT 79	MAG 11 022337Z NOV 79	" 090052Z NOV 79	" 090053Z NOV 79		VMFA 531 181537Z OCT 79	MAG 11 091715Z NOV 79	=	=	TACELRON 33 031611Z OCT 79	WASH DC 111734Z OCT 79	CUBI PT. 082317Z NOV 79			
_	TY.	THS.					×	-	×	×	×			×		_		 	 	
	-40	VHS	×	×	×	×		×				×	×		×	×				
		DISP	всм	BCM		BCM		всм	BCM	BCM	BCM	BCM	всм	BCM		BCM	REP			
		CAUSE	UNK	UNK	SUSP RIVET	METAL OBT		SUSP RAG	UNK	SUSP NON-SKID	UNK	UNK	UNK	UNK	UNK	SUSP RIVET	UNK			
		CAT	MAJ	MAJ		F	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ		MAJ			
		S/N	421533	401955	401791	0 10 10 10 10 10 10 10 10 10 10 10 10 10	421338	401301	421642	421305	401333	401303	421956	421585	421694	422004	421715			

* UNSATISFACTORY REPORT FILE, RECORD IDENT



J79GE-8C/D	NOV/DEC 1979	JCN		KB2-931442	KB2-932045				GE/-933/AUU								
772	Z LS)/ REF		* 79110 3 0501	* 791116 3 0901	CODAL SEA 1710247 DEC 79	OC DEC SALCCES BOTH WITH	KEY WEST 0422142 DEC 73	** 800107 5 18100								
/								×			 			 			
/	JAE	HS	×	×	×		←		×	 	 	 	 	 	 	 	-
		DISP /	BCM				,		- :	 	 	 		-			
		CAUSE	SUSP INT MAT FAIL	BIRD	UNK		UNK	TEST CELL HARDWARE	UNK		44						
		CAT	MAJ				MAJ										
		S/N	401440	401513	401736		421853	401928	401635								

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** UNSATISFACTORY REPORT FILE, RECORD IDENT



J79GE-8C/D	JAN/FEB 1980	JCN				SBO-933375		GQ2-004947	KB1-001027			
	ORE ST CI)/ REF	YUMA 181651Z JAN 80	CORAL SEA 140602Z JAN 80	" 141144Z JAN 80	WASH DC 082101Z JAN 80	VMFA 314 132235Z FEB 80	YUMA 221600Z FEB 80	KEY WEST 041812Z FEB 80	* 800620 5 18241		
	41	HS					 					
	ORE	HS	×	<u>×</u>	×		 ×	×	×			
		DISP /	BCM-7	BCM	BCM	BCM	···· •	BCM-7				
		CAUSE	UNK	SAFETY PIN	BOLT	UNK	UNK	UNK	NNN	11117	ONN	
		CAT					MAJ	MAJ				
		S/N	401828	401598	401491	422009	421373	421927	421792	1 0	422012	

* UNSATISFACTORY REPORT FILE, RECORD IDENT



J79GE-8C/D MAR/APR 1980	JCN			GB8-008748			SBO-0038317	*****					SBO-011357	
CELL	REF REF	VMFA 314 100	" 100041Z APR 80	CORAL SEA 031410Z APR 80	" 221954Z MAR 80	" 161524Z MAR 80	WASH D.C. 101303Z MAR 80	=	MAG 15 060253Z MAY 80	" 110237Z APR 80	CORAL SEA 041558Z APR 80	" 032036Z APR 80	WASH D.C. 092003Z MAY 80	
	SHORE			×	×	×			 		×	×		
			×				×	×	 ×	×				
	DISP				RFI		BCM	BCM					BCM	
	TANIAR	CAUSE CERTIFICATION CAUSES	NNC	RIVET	EXT MAT FAIL	HARD ROUND OBJ	UNK	UNK	UNK	SUSP FASTENER	BOLT OR SCREW	UNK	UNK	
	E	CAT	MAJ	MAJ	MAJ	MAJ			MAJ	MAJ	MAJ			
	27	N/S	401209	401298	421965	401962	401470	401520	421711	401525	421196	401298	421762	



J79GE-8C/D MAY/JUNE	JCN	SBO-012794						-			KBA	
RE CELL	REF	* 800506 3 0401	CUBI PT 020417Z JUN 80	MIDWAY 121416Z JUN 80	80	VMFA 323 241439Z JUN 80	KEY WEST 031432Z JUN 80	:	WASH D.C. 091432Z JUN 80	** 800620 5 18241	* 800608 4 0401	
d	IHS			×								
RE	OHS	×	×		×	×	×	×	×	×	×	
	DISP		RFI	всм	-		M/I	M/I	всм			
	CAUSE	SUSP INT MAT FAIL	1/2" CARBON CHUNK	UNK	UNK	UNK	UNK	INT MAT FAIL	UNK	SUSP GRAVEL	UNK	
	CAT		MAJ	MAJ	MAJ	MAJ				MIN		
	S/N	421316	401671	421890	421668	421922	421033	401722	401998	401477	421601	

* MISHAP REPORT FILE, RECORD IDENT
** UNSATISFACTORY REPORT FILE, RECORD IDENT



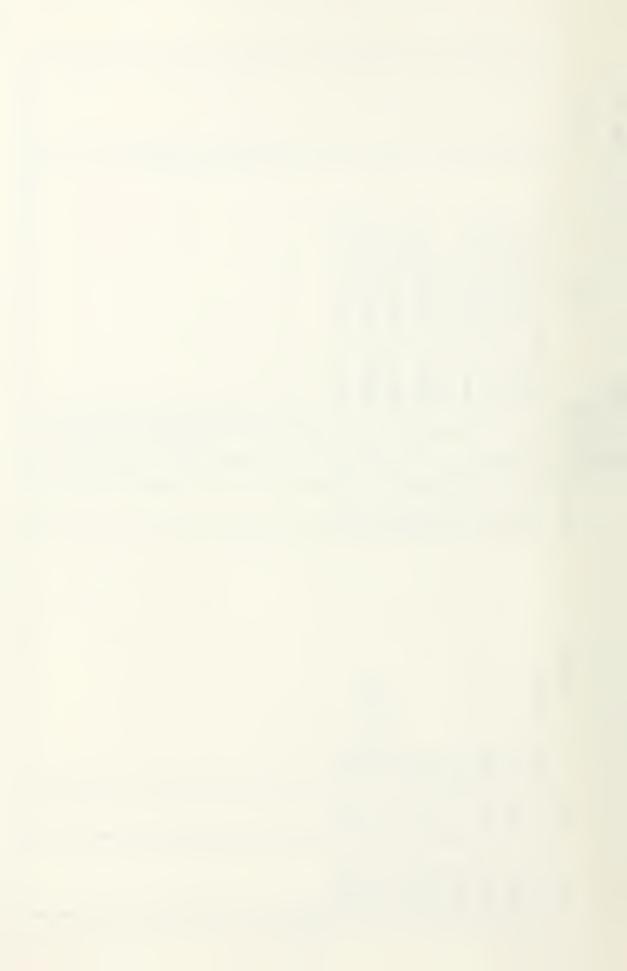
J79GE-8C/D JUL/AUG 1980	JCN											
TO CETY	REF		VMFA 531 242359Z JUL 80	MIRAMAR 080007Z AUG 80	=	=	WASH D.C. 021918Z JUL 80	VMFP 3 101703Z SEP 80	YUMA 200101Z AUG 80	VMFA 314 280007Z AUG 80	KEY WEST 011258Z AUG 80	
<i>d</i> ;	IHS		<u> </u>					 		 .		
THE	PHS	×	×				×	×	×	×	×	
	DISP	BCM-7	BCM	всм	REP	BCM	BCM	BCM	BCM-7	BCM	M/I	
	CAUSE	INT MAT FAIL	BOLT	SCREEN	UNK	UNK	UNK	INFLIGHT, MIDAIR COLL	SCREW	SMALL PIN OR BOLT	CONCRETE	
	CAT	MAJ	MAJ	MAJ	MIN	MAJ		T,AM	MAJ	MAJ		
	S/N	421861	401246	401178	422080	421281	401477	401732	421782	421784	401783	



1980 JCN						
	VMFA 314 181811Z SEP 80	" 531 110009Z SEP 80	FITRON 171 221715Z OCT 80	FITRON 171 041938Z DEC 80	" 311833Z DEC 80	
SHORE						
DISP /		×	<u>ж</u>	<u>×</u>	×	
IQ	BCM	BCM	W/I			
CAUSE	UNK SCREW OR BOLT	SUSP EXT MAT FAIL	UNK	INT MAT FAIL	NUTS/BOLTS	
CAT	MAJ	MAJ				
S/N	421852	421691	401823	421266	401485	



J19GE-10A/B	JUN 1979	JCN										
TTI		j/ REF	AIRTEVRON 4 192124Z JUN 79	RANGER 051749Z JUN 79	CUBI PT. 060141Z JUN 79	HAMS 31 091414Z JUL 79	YUMA 061429Z JUN 79	CUBI PT. 110507Z JUN 79	HAMS 15 070425Z JUN 79	RANGER 141117Z JUN 79	CUBI PT. 110557Z JUL 79	
_	dI di	HS AT		×				×		×		
	ORE	HS	×		×	×	×		×		×	
		DISP /		BCM		CER	BCM	ВСМ	BCM	BCM	AWM	
		CAUSE D	SCREW FASTENER	UNK	UNK	UNK	UNK	UNK	INT MAT FAIL	BOLT OR SCREW	UNK	
		CAT	MAJ	MAJ	MAJ		MAJ	MAJ	MAJ	MAJ	MAJ	
		S/N	433118	433439	448076	433830	433742	448296	433765	448422	448189	



J79GE-10A/B JUL 1979	JCN							A8K-9192658				
CELL	SZ/ REF	RANGER 130357Z JUL 79	YUMA 021421Z AUG 79	MIDWAY 200050Z JUL 79	CUBI PT 140723Z JUL 79	FITRON 31 011300Z AUG 79	= =	* 790726 5 13480	MIDWAY 020338Z JUL 79	ATSUGI 130644Z AUG 79	HAMS 15 100049Z AUG 79	
TE SE	INS	×		×					×			
	DISP/	BCM	BCM X		×	AWM X	AWM X			BCM X	BCM X	
	CAUSE	BOLT OR SCREW	UNK	SHARP EDGED OBJ	UNK .	STONES/SAND	=	UNK	SCREW OR BOLT	UNK	UNK	
	CAT	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MIN	MAJ	
	S/N	448422	448316	433878	433599	448307	433933	433853	433463	448016	433322	

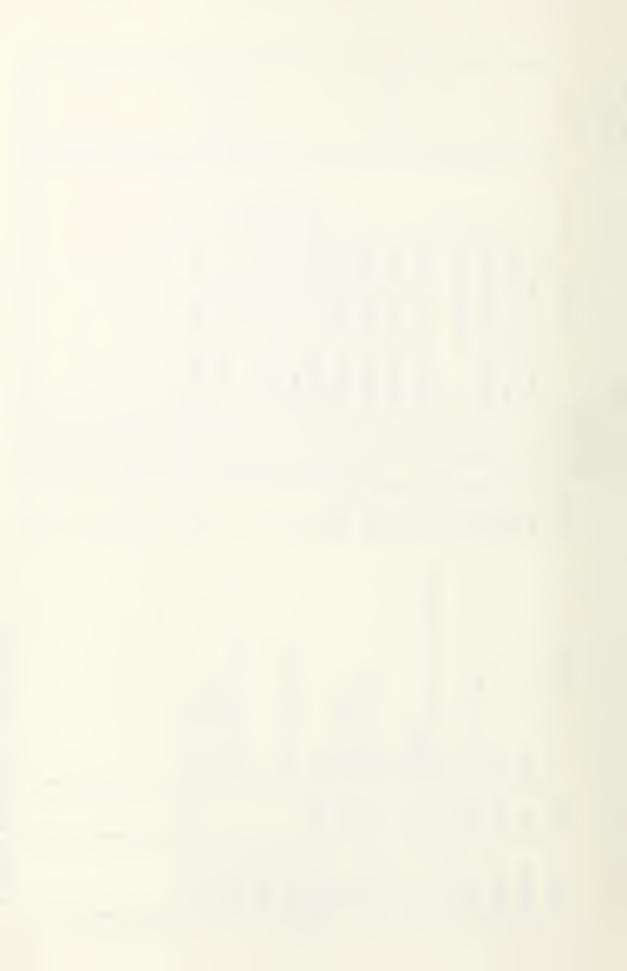
* UNSATISFACTORY REPORT FILE, RECORD IDENT



J79GE-10A/B	AUG 1979	JCN													FEA-922720		
ETT	TAIL C.	REF	YUMA 021421Z AUG 79	HAMS 15 100049Z AUG 79	MIDWAY 310026Z AUG 79	" 270006Z AUG 79	RANGER 190915Z AUG 79	MIDWAY 162342Z AUG 79	ATSUGI 150210Z AUG 79	MIDWAY 100648Z AUG 79	FITRON 103 071048Z AUG 79	VMFA 451 101621Z AUG 79	FITRON 103 211904Z AUG 79	" 74 301632Z AUG 79	* 790815 3 0701	MIDWAY 061030Z SEP 79	
\	7.	HS														×	
	BRE	PHS	×	×	×	×	×	×	×	×	×	×	×	×	×		
		DISP /	BCM	ВСМ	BCM	ВСМ	ВСМ	AWM	BCM	BCM						BCM	
		CAUSE	UNK	UNK	SUSP e/8" NUT	BOLT	RUBBER MOLDING FROM INTAKE SCREEN	BIRD	SUSP METAL OBJ	SUSP STONE	UNK	LAU 17 SAFETY PIN	= =	SUSP BOLT OR SCREW	SUSP FASTENER	BOLT/SCREW	
		CAT	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MIN	MAJ	MIN					MAJ	
		S/N	448316	433322	433840	448093	433227	433429	433187	44016	433741	433161	448358	448184	433757	448364	

* MISHAP REPORT FILE, RECORD IDENT

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J79GE-10A/B	SEP 1979	JCN				GNS-924877				
TTE	1.5	REF	MIDWAY 061030Z SEP 79	YUMA 202311Z SEP 79	RANGER 140543Z SEP 79	VMFA 211 101740Z SEP 79	" 251 071821Z SEP 79	* 791008 2 0801	MIDWAY 100516Z OCT 79	
_	41	AT Z	×		×	-		×	×	
	ORE IP	HS		×		×	×			
		DISP	всм	BCM	BCM				всм	
		CAUSE	BOLT OR SCREW	UNK	5/16" FASTENER	UNK	UNK	UNK	UNK	
		CAT	MAJ	MAJ	MAJ	MAJ	-		MAJ	
		S/N	448364	433548	448046	448212	448315	433865	433187	

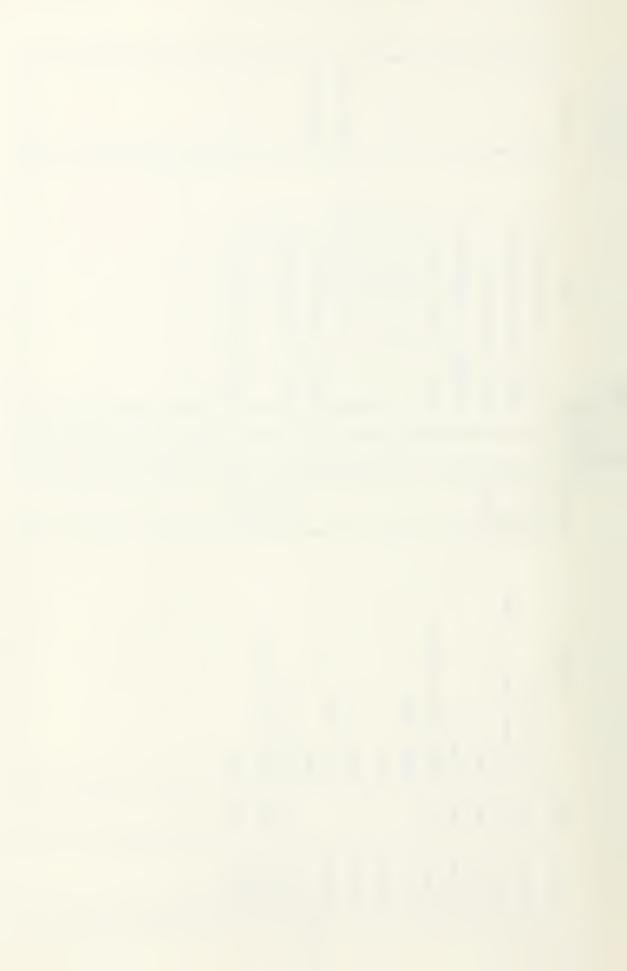
* MISHAP REPORT FILE, RECORD IDENT



J79GE-10A/B	OCT 1979	JCN			,													
J.D.	90	REF	242044Z OCT 79	240304Z OCT 79	121 262040Z OCT 79	MIDWAY 271314Z OCT 79	310130Z OCT 79	PT 082317Z NOV 79	YUMA 101 012310Z NOV 79	MIDWAY 010706Z NOV 79	VMFA 122 011900Z OCT 79	101956Z OCT 79	131836Z OCT 79	262023Z OCT 79	311605Z OCT 79	24 090240Z NOV 79 ·	MIDWAY 081602Z NOV 79	
TET		HS	VMFA 314	" 232 2	" 121 2	MIDWAY 271	310	CUBI PT 08	XUMA 101 C		VMFA 122 (FITRON 74	. 11	" 31	" 171	HAMS 24 0		
\	BE	HS	· · · · · ·			×	×			×	×	×	×	×	×		×	
		DISP/	×	×	<u>×</u>	ВСМ		REP	×				BCM-1			AWP	всм	
		CAUSE	UNK	SUSP METAL OBJ	BIRD STRIKE	SAFETY PIN	CENTERLINE SAFETY PIN	SCREW	UNK	SUSP NON-SKID	SECTION OF TURN-UP SCREEN	PIECE OF ALUMINUM	UNK	UNK	UNK	UNK	UNK	
		CAT	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MIN						MAJ	MAJ	
		S/N	421956	433598	448438	448304	433815	433840	448350	433956	433722	433398	448301	433639	448279	448084	448190	



J79GE-10A/B	NOV 1979	JCN									FEA-926741	FE8-931910				
TTE	O US	REF REF	VMFA 235 270137Z NOV 79	VMFA 232 282332Z NOV 79	YUMA 292230Z NOV 79	FITRON 121 031820Z DEC 79	CUBI PT 092347Z DEC 79	" 451 022016Z NOV 79	" 251 021640Z NOV 79	" 451 022015Z NOV 79	" 333 052059Z NOV 79	NORVA 261256Z NOV 79	CUBI PT 092347Z DEC 79	=	YUMA 071525Z DEC 79	
_	ORE	HS														
		1251	×	×	×	×		×	×	×	×	×			×	
		DISP	REP	BCM-1	BCM-1								AWP	AWP	BCM-1	
		CAUSE	INT MAT FAIL	GROUNDING CABLE & CLAMP	UNK	METAL OBJ	SMALL SOLID OBJECT	PANEL SCREW	UNK	UNK	SUSP SCREW	UNK	THREADED OBJ	LARGE SOLID OBJECT	UNK	
		CAT	MAJ	MAJ	MAJ	MAJ	MAJ						MAJ	MAJ	MAJ	
		S/N	448126	433291	433192	448178	433661	448262	433890	433725	448183	448379	448016	433227	433468	



J79GE-10A/B DEC 1979	JCN										
I CETT	REF	MIDWAY 071822Z DEC 79	YUMA 202327Z DEC 79	MIDWAY 220958Z DEC 79	" 152354Z DEC 79	SARATOGA 100605Z DEC 79	FITRON 11 132221Z DEC 79	CUBI PT 160217Z JAN 80	:	MIRAMAR 040136Z JAN 80	
J. J	IHS	×		×	×						
		·	×			×	×			×	
	DISP	ВСМ	BCM-1	BCM	BCM			AWP	AWP	CER	
	CAUSE	SUSP 1/4" SCREW OR BOLT	BOLT	SUSP SMALL BOLT OR SCREW	SMALL BOLT OR SCREW	UNK	UNK	BOLT	SMALL METAL OBJ	UNK	
	CAT	MAJ	MAJ	MAJ	SMALL			MAJ	MAJ	MAJ	
	s/N	433836	433360	433594	433355MAJ	433639	448381	433483	448304	448178	



J79GE-10A/B JAN 1980	JCN					GN3-001870							
TTIO I.	A/ REF	MIDWAY 050340Z FEB 80	" 122246Z JAN 80	" 071008Z JAN 80	" 271814Z JAN 80	VMFA 212 240550Z JAN 80	" 451 210508Z JAN 80	FITRON 74 031124Z JAN 80	SARATOGA 070015Z JAN 80	VMFA 312 312136Z JAN 80	" " 312137Z JAN 80	" " 312135Z JAN 80	
d	IHG			<u>-</u> .									
JAE	OHS	×	×	×	<u>×</u>	×	×	×	×	×	×	×	
	7		۶'		<u></u>								
	DISP	BCM	BCM	BCM	BCM	BCM	BCM						
	CAUSE	INT MAT FAIL	SUSP BOLT	SUSP SCREW	ORD PIN BAG WITH 4 SHRTG CAPS	SUSP INT MAT FAIL	1/4 x 28 BOLT	UNK	UNK	UNK	UNK	UNK	
	CAT	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ						
	S/N	433392	448134	433675	433385	433621	433681	433799	433896	433995	433703	433817	



J79GE-10A/B FEB 1980	JCN							GB7-005719						
TA CETI	REF	FITRON 121 051742Z MAR 80	VMFA 235 072100Z FEB 80	YUMA 231445Z FEB 80	YUMA 262201Z MAR 80		FORESTAL 041905Z FEB 80	* 800226 3 1001	CG 1st MAW 210804Z MAR 80	CUBI PT 120007Z MAR 80	= =		MIDWAY 090912Z MAR 80	
4	TEC													
BE	OHS						×						×	
		×	×		×	×	7	×						
	DISP		REP	BCM-7	BCM		BCM-7	BCM	BCM		REP	REP	BCM	
	CAUSE	METAL OBJ	SUSP GRAVEL	UNK	UNK	UNK	MAIN MOUNT FROM OTHER A/C	SUSP SCREW	UNK	SAFETY WIRE & THREADED OBJ	SCREW	UNK	SCREW	
	CAT	MA.T	MIN	MAJ	MAJ	MAJ			MAJ	MAJ	MAJ	MAJ	MAJ	
	S/N	433543	448386	433624	448245	433488	448161	448085	433132	433675	433429	433513	433312	

* MISHAP REPORT FILE, RECORD IDENT



/B	1-		2.7	2												4	
J79GE-10A/B MAR 1980	JCN		GQ1-0068107	GF3-007412		7										AF1-007224	
J79			Õ	GF		GB7										AF	
RE CELL)/ REF	YUMA 212345Z MAR 80	" 111935Z MAR 80	VMFA 235 202356Z MAR 80	MIDWAY 071146Z MAR 80	VMFA-232 132345Z MAR 80	SARATOGA 070527Z MAR 80	VMFA 251 102011Z MAR 80	FITRON 33 111335Z MAR 80	VMFA 232 120110Z MAR 80	FITRON 74 150501Z MAR 80	VMFA 312 191341Z MAR 80	FITRON 33 211957Z MAR 80	" " 251645Z MAR 80	VMFA 122 252305Z MAR 80	* 800313 3 1401	
d	IHC																
RE	OHS	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	
							-7										
	DISP						BCM-7	CER			BCM	AWP			AWP		
	CAUSE	1/4" BOLT	UNK	UNK	BOLT OR SCREW	SUSP PANEL SCREW	UNK	SUSP SCREW	UNK	SUSP SCREWS	INT FAIL	RIVET	UNK	UNK	UNK	UNK	
	CAT	MAJ	MAJ	MAJ	MAJ	MAJ				MAJ							
	S/N	433352	433868	448207	448124	433753	433999	433149	433693	448085	433490	433443	448423	448027	433801	433865	

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J79GE-10A/B	NOC															
TTTO	ORE STATES		FITRON 154 171800Z APR 80	ATSUGI 300702Z APR 80	MAG 15 091033Z APR 80	VMFA 235 252047Z APR 80	ATSUGI 120604Z MAY 80	=	VMFA 122 042318Z APR 80	NAVSTA ROM 071406Z APR 80	HAMS 31 072053Z APR 80	FORRESTAL 101605Z APR 80	SARATOGA 112033Z APR 80	" 141138Z APR 80	VMFA 312 161601Z APR 80	
	dIH	5		,-						×		×	×	×		
	246	SI _	×	×	×	×	×	×	×		×				×	
	nteb	DISE		BCM			BCM	BCM	AWP	BCM			BCM	BCM	AWP	
	0.000	CAUSE	SUSP 10/32" SCREW	INT MAT FAIL	UNK	SUSP GRAVEL	UNK	UNK	SUSP RIVET	FLASHLIGHT & GOGGLES	UNK	INT MAT FAIL	UNK	UNK	UNK	
	6	CAT	MAJ	MAJ	MAJ	MIN	MAJ	MAJ								
		S/N	433368	433892	448069	433109	433466	448011	433182	488174	448232	433855	433798	448150	448315	



	J/9GE-10A/B MAY 1980	JCN												-	
TT		REF	SARATOGA 042041Z MAY 80	FITRON 171 211420Z MAY 80	VMFA 122 211351Z MAY 80	MAG 24 090211Z MAY 80	VMFA 232 100314Z MAY 80		VMFA 232 100313Z MAY 80	YUMA 090025Z MAY 80	FITRON 21 272035Z MAY 80	HAMS 15 050021Z JUN 80	= =	=	
'		TE													
\	BE	OHO	×	×	×	×	×	×	×	×	×	×	×	×	
		DISP	BCM		AWP	BCM		BCM	BCM	BCM-7		BCM	BCM	BCM	
		CAUSE	UNK	SUSP INT MAT FAIL	SUSP BOLT	UNK	RIVET	UNK	UNK	UNK	UNK	UNK	UNK	UNK	
		CAT		MAJ		MAJ	MIN	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	
		S/N	448125	433619	433673	433636	448430	433885	433150	433375	448313	433594	433476	433592	



J79GE-10A/B JUN 1980	JCN												
TTAD LG	EV REF	CUBI PT 020417Z JUN 80	= =	FITRON 21 051535Z JUN 80	" 051635Z JUN 80	YUMA 032106Z JUL 80	" 212307Z JUN 80	VMFA 212 232220Z JUN 80	" 232 292345Z JUN 80	" 235 301853Z JUN 80	" 451 260312Z JUN 80	VMFA 122 041810Z JUN 80	
DRE	HS												
	DISP/	RFI X	RFI X	<u>×</u>	×	BCM-7 X	BCM-7 X	×	BCM X	×	BCM X	CER X	
	D			<u>.</u>		ă —	Ä		<u> </u>		<u>й</u>	O .	
	CAUSE	SMALL OBJ	1/4 x 28 BOLT	SUSP BRONZE OBJ	SMALL ROCK	UNK	UNK	SUSP RIVET	UNK	SUSP RIVET	UNK	SUSP RIVETS	
	CAT	MAJ	MAJ	MAJ	MIN	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ		
	S/N	148281	433227		448376	448406	433629	433260	448074	433987	448123	433162	



J79GE-10A/B	100 T980														
TTE	7) 2) DEF		YUMA 061410Z AUG 80	" 282100Z JUL 80	MIDWAY 281118Z JUL 80	MIDWAY 110650Z JUL 80	VMFA 212 291815Z JUL 80	" 232 250432Z JUL 80	" 451 051811Z AUG 80	CUBI PT 060007Z AUG 80	:	FITRON 74 121927Z JUL 80	VMFA 312 171431Z JUL 80	" " 311716Z JUL 80	
	O LSEL OHID HOME	4/6/2			×	×			·						
			×	×	-		×	×	×			×	×	×	
	15	UISE	BCM		BCM-7	BCM	BCM	BCM	BCM			CER		CER	
		CAUSE	BUSHING	GRAVEL	ROUND OBJ	UNK	UNK	SML HRD OBJ	IFR PROBE LOCKING LUG	HARD METAL OBJ	BOLT OR SCREW	UNK	UNK	UNK	
	!	CAT	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ				
		S/N	448155	448326	433359	448091	433264	448008	448395	448069	433296	448311	448232	448267	



J79GE-10A/B AUG 1980	JCN								···			
CETT	(G) REF	VMFA 115 011750Z AUG 80	SARATOGA 0713572 AUG 80	VMFA 312 191511Z AUG 80	FITRON 171 221700Z AUG 80	" 281415Z AUG 80	" 291901Z AUG 80	YUMA 152225Z AUG 80	MIDWAY 201802Z AUG 80	VMFA 235 281335Z AUG 80	MAG 24 110236Z SEP 80	
CETT	ITHS		×						×			
	DISP /	_		X X	×	×	×	BCM X	BCM	RFI X	AWM	
	DI	CER		CER				B	B	Z	AI	
	CAUSE	UNK	SUSP SCREW OR BOLT	UNK	UNK	INT MAT FAIL	UNK	SUSP ZEUS FASTENER	SHRADER VALVE CAP	UNK	UNK	
	CAT							MAJ	MAJ	MAJ	MIN	
	S/N	448088	433451	433851	433327	433309	448282	433358	448048	433931	448403	



J79GE-10A/B SEP/OCT 1980 JCN															
SHIP CELL	ITRON 121 1	" 154 232200Z SEP 80	VMFA 232 162213Z SEP 80	ROTA 050707Z SEP 80	VMFA 312 251316Z SEP 80	" " 251317Z SEP 80	" " 301127Z SEP 80	* 801001 3 0201	FITRON 103 101429Z OCT 80	" 171 101600Z OCT 80			VMFA 112 141900Z OCT 80	" 312 282115Z OCT 80	
HORE	~			×								×			
) dstd	`	×	<u>×</u>		×	×	×	×	×	×			×	×	
GOLIAC	CACSE	UNK	SMALL HARD OBJ	SUSP NON-SKID	UNK	UNK	UNK	SCREW	CHAD CONCRETE	TOTAL CHETCE	BIRU SININE	UNK	INTAKE SCREEN PIN	UNK	* MISHAP REPORT FILE, RECORD IDENT
Ē	CAT.	MAJ	MIN												REPOR
	S/N 433401	433622	433249	433251	433722	433134	433393	433694	133157		433803	433147	433410	433983	* MISHAE



TF30-P414 JUN 1979	JCN		•						PE2-9158686		PE2-9164401					
P CELL	A REF	FITRON 24 282215Z JUN 79	KITTY HAWK 291253Z JUN 79	FITRON 211 251920Z JUN 79	" 261645Z JUN 79	" 131600Z JUN 79	" 2 082158Z JUN 79	" 211 212330Z JUN 79	MIRAMAR 121642Z JUL 79	= =	* 790718 5 15570	AMERICA 010439Z JUL 79	= =	EISENHOWER 030854Z JUL 79	FITRON 14 281855Z JUN 79	
			×									×	×	×		 -
RE	OHS	×		×	×	×	×	×	×	×	×				×	1
	DISP,													BCM-1		
	CAUSE	UNK	UNK	SMALL METAL OBJ	CALFAX BARREL	LRG METAL OBJ	SUSP SMALL STONE	SMALL METAL OBJ	UNK	UNK	METAL OBJ	UNK	UNK	UNK	UNK	
	CAT	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MIN	MAJ	MAJ						
	S/N	687238	695547	679282	687285	679540	695098	679407	695563	695512	679504	695135	679342	687026	687063	

* UNSATISFACTORY REPORT FILE, RECORD IDENT

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TF30-P414 JUL 1979	JCN																				
TTTT	REF	FITRON 124 061513Z AUG 79	" 24 272324Z JUL 79	" 211 241818Z JUL 79	" 124 181556Z JUL 79	" 24 251610Z JUL 79	" 192130Z JUL 79	" " 192125Z JUL 79	" 172116Z JUL 79	" 211 131927Z JUL 79	" 1 122305Z JUL 79	" 24 102231Z JUL 79	MIRAMAR 091439Z AUG 79	:	:	FITRON 114 061537Z JUL 79	OCEANA 102040Z JUL 79	FITRON 32 311731Z JUL 79	KITTY HAWK 090250Z JUL 79		
	TES																				
SE	OHS															×			×	 	
	- 1	×	,	×	×	×	×	×	×	×	×	×	×	×	×		×	×			
	DISP					REP							BCM	REP	BCM	BCM	RFI				
	CAUSE	IFR BASKET BLADES	UNK	PIECES OF GUN ASSY	CALFAX FASTENER	FASTENER	CALFAX FASTENER	UNK	UNK	SUSP INT MAT FAIL	UNK	UNK	UNK	METAL OBJ	METAL OBJ	20mm SHELL CASING	UNK	CALFAX BARREL	UNK		
	CAT	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MIN	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ				MAJ		
	S/N	695576	679454	674659	687135	695041	695149	687109	687031	090289	679340	679348	687000	687012	687238	695027	679266	679263	695547		



TF30-P414 AUG 1979	JCN																AE2-923523	
TTTT I	ら) A/ REF	 xTTTTV HAWK 0209042 AIIG 79		FITRON 211 201613Z AUG /9	" 124 171825Z AUG 79	PT MUGU 142246Z AUG 79	MIRAMAR 072012Z SEP 79	=	=	FITRON 213 051859Z AUG 79	" 32 081611Z AUG 79	NIMITZ 091352Z AUG 79	FITRON 14 141600Z AUG 79	NIMITZ 141748Z AUG 79	FITRON 142 231630Z AUG 79	" 231230Z AUG 79	NIMITZ 281647Z AUG 79	
To de	IHS	>								×				×			×	
AA	OHS	·		×	×	×	×	×	×	_	×	×	×		×	×		
	DISP	MJa	; ;				CER	CER	BCM									
	CAUSE	T (1) (1) (1) (1)	SMALL HARD OBS	UNK	TWO METAL OBJ'S	UNK	SUSP ICE	IFR DROUGE BLADE	UNK	LARGE METAL OBJ	SUSP METAL OBJ	INT MAT FAIL	SUSP RIVET	SUSP SAFETY WIRE	SUSP CALFAX	MTL OBJECT	FLOTATION VEST & TOOL POUCH	
	CAT	,	MAG	MIN	MAJ	MAJ	MAJ	MAJ	MAJ									
	S/N		675538	679506	695563	679496	679259	695576	695443	679445	687150	687230	679338	687120	679379	695438	687278	



414												
TF30-P414 SEP 1979	JCN										· · · · ·	
T CEPT	REF	NIMITZ 0422122Z OCT 79	FITRON 124 131920Z SEP 79	" 211 261445Z SEP 79	PT MUGU 212032Z SEP 79	FITRON 124 121633Z SEP 79	" 211 102315Z SEP 79	" " 091610Z SEP 79	* 790927 3 0201	VF-101 FOD REPORT	MIRAMAR 102344Z OCT 79	
A. J.	IHS	_×_					×		×			
			×	×	×	×		×			×	
	DISP										REP	
	CAUSE	UNK	UNK	SUSP HI-TORQUE FASTENER	UNK	R/W DEBRIS	UNK	RIVET	UNK	SUSP CALFAX	UNK	UNSATISFACTORY REPORT FILE, RECORD IDENT
	CAT	MAJ	MAJ	MAJ	MAJ	MAJ	MIN	MIN			MAJ	SFACTO
	S/N	695186	679301	695082	687034	679420	687157	695020	695414	687043	687169	* UNSATI



TF30-P414 OCT 1979	JCN														
TTTTO TO	REF	FITRON 24 091500Z OCT 79	" 2 111955Z OCT 79	" 24 222345Z OCT 79	CONSTELLATION 242117Z OCT 79	" 272253Z OCT 79	FITRON 213 312101Z OCT 79	" 010400Z NOV 79	PT MUGU 052254Z OCT 79	FITRON 14 121525Z OCT 79	NIMITZ 170729Z OCT 79	OCEANA 232222Z OCT 79	FITRON 101 221926Z OCT 79	NIMITZ 251110Z OCT 79	
	TEC											×			
JE JE	THS	×	×	×	×	×	×	×	×	×	×		×	×	
	DISP /														
	DI			REP			REP								
	CAUSE	UNK	UNK	SUSP CALFAX FASTENER	UNK	UNK	SUSP METAL OBJ	SUSP SMALL METAL OBJ	RAG	UNK	UNK	UNK	SUSP SCREW/CALFAX	SUSP INT FAIL	
	CAT	MAJ	MAJ	MAJ	MAJ	MIN	MAJ	MAJ	MAJ						
	S/N	687292	695493	679477	687284	695417	679432	687215	679327	687198	695431	687010	679258	687255	



TF30-P414 NOV/DEC 1979	JCN														
P CELL	REF	FITRON 24 262000Z NOV 79	FITRON 114 152331Z NOV 79	NIMITZ 181754Z NOV 79	VF-101 REPORT NORVA	FITRON 124 021641Z NOV 79	CUBI PT 092347Z DEC 79	CONSTELLATION 052126Z DEC 79	FITRON 124 262257Z DEC 79	" 211 201500Z DEC 79	KITTY HAWK 160450Z DEC 79	FITRON 101 051830Z DEC 79	" 142 101453Z DEC 79	KITTY HAWK 021431Z JAN 80	
d	I_{HS}			×			×	 ×			×			×	
RE	OHS	×	×		×	×		 	×	×		×	×		
	DISP /								REP		BCM		RFI	BCM	
	CAUSE	FASTENER	UNK	UNK	SUSP SCREW	SUSP FASTENER	STEEL STRIPPING SHOT	UNK	FLASHLIGHT	SUSP FASTENER	UNK	SUSP HI-TORQUE SCREW	HARD METAL OBJ	UNK	
	CAT	MAJ	MIN			MAJ	MAJ	MAJ	MAJ	MIN	MAJ			MAJ	
	S/N	687286	687144	679395	695450	687169	695046	679343	679527	679319	695546	67936	687029	695413	



TF30-P414 JAN 1980	JCN						AG7-002264							
TTJO LS	REF	FITRON 1 250057Z JAN 80	KITTY HAWK 020653Z FEB 80	NIMITZ 260820Z JAN 80	FITRON 114 172001Z JAN 80	FITRON 142 241724Z JAN 80	" 252240Z JAN 80	NIMITZ 041445Z FEB 80	=	=	KITTY HAWK 121150Z FEB 80	CONSTELLATION 042132Z FEB 80	= =	
			×	×		×	×	×	×	×	×	×	×	
SRE	HS	×			×									
	DISP		всм		ВСМ		BCM-7	BCM	BCM	BCM	BCM	RF1	BCM	
	CAUSE	INLET DIFFUSER RAMP	INT MAT FAILURE	CALFAX	NON-SKID	SUSP METAL OBJ	SUSP SCREW/BOLT	INT MAT FAIL	NON-SKID	NON-SKID	UNK	GUN COWLING FASTENER	INT MAT FAIL	
	CAT	MAJ	MAJ	MAJ	MAJ			MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	
	S/N	695098	695545	687038	695038	679430	679555	695478	687235	679356	695557	687085	687185	

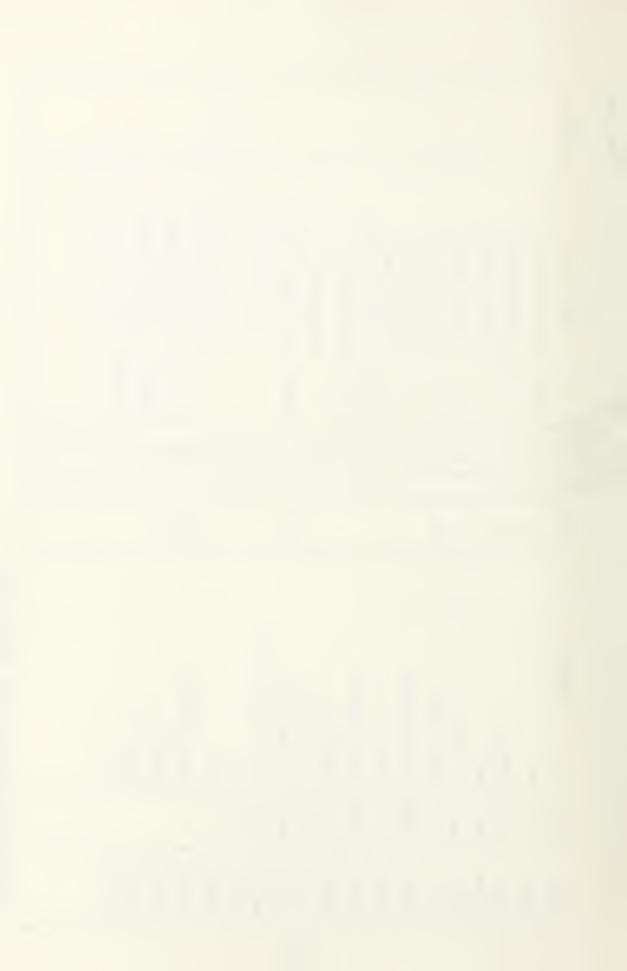


TF30-P414 FEB 1980	JCN													PK6-005229	PK6-003854							
	REF	FITRON 124 112145Z FEB 80	" 211 152147Z FEB 80	" 214 152104Z FEB 80	NIMITZ 190418Z FEB 80	FITRON 2 042200Z FEB 80	PT MUGU 080013Z MAR 80	FITRON 114 271801 FEB 80	" 1 242335Z FEB 80	" 213 111700Z FEB 80	" " 052200Z FEB 80	" 211 080446Z FEB 80	" " 080449Z FEB 80	24 221317Z FEB 80	" " 072115Z FEB 80	NIMITZ 190601Z FEB 80	FITRON 143 062005Z FEB 80	" 101 221923Z FEB 80	" 143 281955Z FEB 80	" " 281956Z FEB 80		
37	IHS				×	×								- :		×			×	×	 	\dashv
44	OHS	×	×	×			×	×	×	×	×	×	×	×	×		×	×				
	DISP	REP		BCM	BCM				REP		BCM			BCM	REP	REP	BCM					
	CAUSE	SUSP 10/32" BOLT/SCREW	SUSP BOLT	UNK	SUSP BRITTLE OBJ, NON-SKID	UNK	UNK	SUSP R/W CEMENT	SUSP SCREW OR CALFAX	SUSP FASTENER	SUSP METAL OBJ	SUSP SMALL STONE	:	INT MAT FAIL	HI-TORQUE SCREW	NUT OR BOLT	UNK	SUSP CALFAX	SUSP SCREW	SUSP RIVET		
	CAT	MAJ	MAJ	MAJ	MIN	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MIN	MIN	MAJ	MAJ	MAJ						
	S/N	695593	687134	695185	695163	679475	687130	687024	695566	960289	679467	679366	687285	687275	679420	695575	679503	679416	679436	695405		

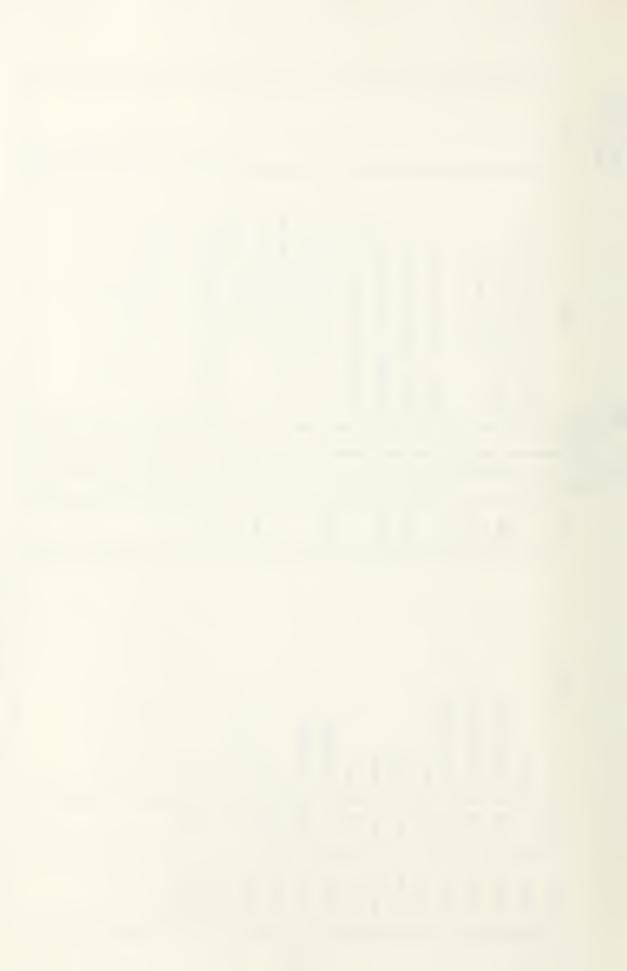


TF30-P414 MAR 1980	JCN																		WC5		
ΗX	-				<u> </u>		<u> </u>														
		APR 80	MAR 80	MAR 80	MAR 80	MAR 80	MAR 80	MAR 80	Z MAR 80	R 80	R 80	Z MAR 80	Z MAR 80	=	Z MAR 80	Z MAR 80	Z MAR 80	Z MAR 80			
	REF	071631Z A	311328Z N	152145Z N	230147Z N	152143Z N	130146Z N	131622Z N	1 292026Z MAR	250527Z MAR	120448Z MAR	4 271758Z	2618552	:	3 062210Z	2 202338Z	121503Z	1 2011452	3 0301		
TTA		N 2	24	=	=	=	=	=	FITRON 211	NIMITZ 25	" 12(FITRON 124	=	=	" 143	" 142	=	FITRON 101	800326		
SELL CELL	LESI		×	×	×	×	×	×	X	×	×	<u> </u>	×	×	×	×	×	X	*		
45	HOHS	×										×							×		
	DISP /		RFI			RFI						REP				REP	BCM				
	CAUSE		STEEL OBJ		5/16" BOLT	INT MAT FAIL	SUSP METAL OBJ		SUSP FASTENER	METAL OBJ	LARGE BOLT	SUSP HAIL/ICE	10/32" HEXHEAD BOLT	×	UNK	SMALL METAL OBJ	METAL OBJ	METAL OBJ	Ж		
		UNK	STEE	UNK	5/16	INT	SUS	UNK	sns	MET	LAI	sns	10,	UNK	5 —	\S	ME	ME	UNK		
	CAT	MAJ UNK	MAJ STEE	MIN UNK	MAJ 5/16	MAJ INT	MAJ SUS	MAJ UNK	MAJ SUS	MAJ MET	MAJ LAF	MAJ SUS	MAJ 10,	MAJ UN	<u> </u>	NS -	ME	ME	ND -		

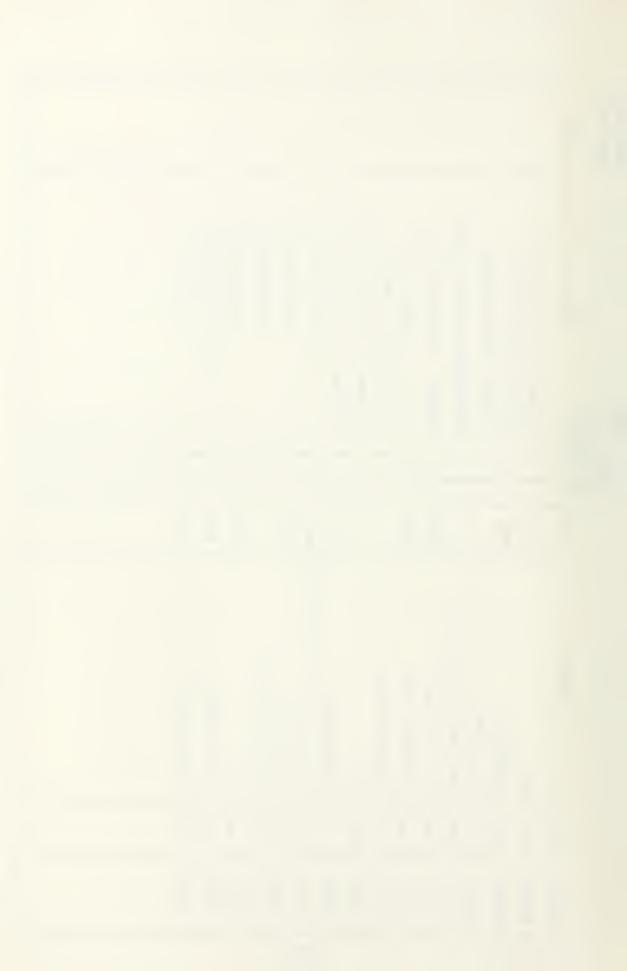
* UNSATISFACTORY REPORT FILE, RECORD IDENT



TF30-P414	APR 1980	JCN		· · · · · · · · · · · · · · · · · · ·															
TTI		A/ REF	FITRON 143 082101Z APR 80	NIMITZ 281452Z APR 80	" 040454Z MAY 80	:	FITRON 2 072300Z APR 80	RANGER 161611Z APR 80	SAN DIEGO 131704Z MAY 80	FITRON 124 212134Z APR 80	" 271445Z APR 80	" 211 071243Z MAY 80	" 213 142000Z APR 80	" 211605Z APR 80	" 241605Z APR 80	SAN DIEGO 131702Z MAY 80	= =		
\	\d;	HS									_								
	BE	OHS	×	<u>×</u>	×	×	×	×	×	×	×	×	×	×	×	×	×		
		DISP /		BCM	BCM	BCM		BCM	REP		REP			REP	REP	HS1			
		D		m —	<u>m</u>	<u>й</u>		<u>M</u>	Ϫ		~~			~	~	H			
		CAUSE	UNK	10/38 SCREW	UNK METAL OBJ	10/32 SCREW	UNK	SCREW	ROCKS	UNK	FASTENER	SUSP BOLT	UNK	SUSP ROCK	SUSP METAL OBJ	UNK	UNK		
		CAT		MIN	MAJ	MAJ	MIN	MAJ	MAJ	MIN	MAJ	MAJ	MIN	MAJ	MIN	MAJ	MIN		
		S/N	695003	695502	687078	679399	679536	679439	695011	695082	695573	687077	701204	695182	701204	695553	695113		



TF30-P414 MAY 1980	JCN																
CETY CETY	REF	MIRAMAR 092031Z MAY 80	RANGER 020605Z MAY 80	FITRON 2 091700Z MAY 80	AIRTEVRON 4 160039Z MAY 80	FITRON 24 280935Z MAY 80	" 190438Z MAY 80	NIMITZ 070925Z MAY 80	ATKRON 122 231903Z MAY 80	FITRON 142 170559Z MAY 80	" 143 300032Z MAY 80	" 280808Z MAY 80	" 211850Z MAY 80	" "110736Z MAY 80	" 211 101919Z MAY 80	" " 181543Z MAY 80	
	THS	-,	×			×	×	×		×	×	×	×	×	×	×	
JAC.	PHS	×		×	×				×								
	DISP	HS1	ВСМ			BCM	ВСМ			BCM-7	BCM-7	REP		BCM-7	BCM	BCM	
	CAUSE	UNK	FASTENER	SUSP SCREW	NOSE WHEEL DOWNLOCK PIN	SUSP 5/16 BOLT	SUSP SMALL BOLT	SMALL METAL OBJ	UNK	INT MAT FAIL	SUSP SCREW/LITE ASSY FROM/FR	SUSP CALFAX	SUSP SAFETY WIRE		SUSP FASTENER	SUSP NON-SKID	
	F.	MIN	Ľ,	,	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MIN	MAJ	MAJ	MIN	
	CAT	Σ	MAJ	MAJ	M	M	M	Æ	Z	Σ.	Σ	Σ	Σ	Σ,	2	24	



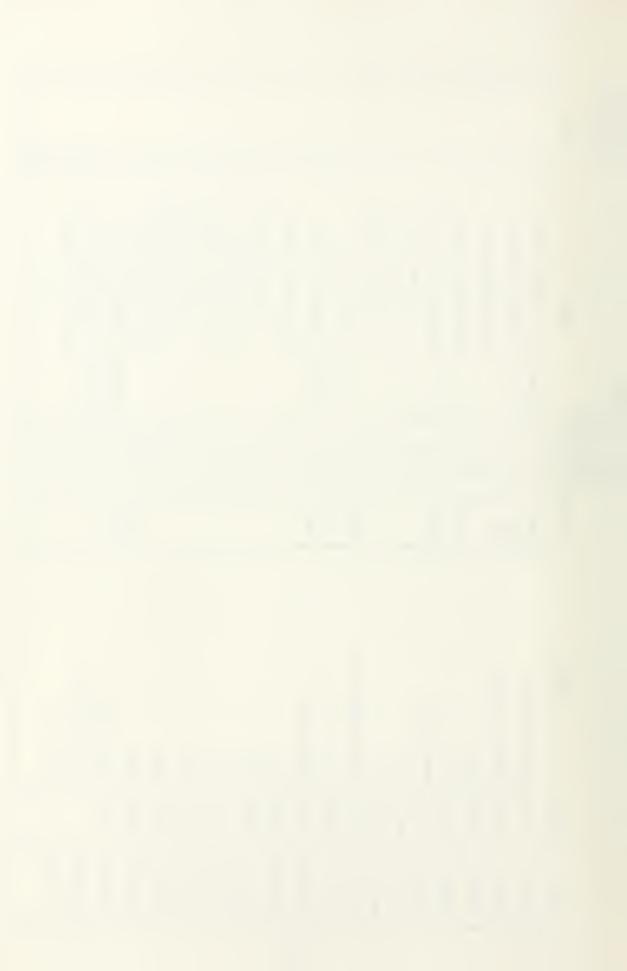
	JUN 1980 JCN																					
CETI	7/59/ REF	EISENHOWER 060502Z JUN 80	MIRAMAR 100030Z JUN 80	:	FITRON 1 241530Z JUN 80 ·	" 24 011422Z JUL 80	" 261856z JUN 80	" 161602Z JUN 80	" 124 191525Z JUN 80	" 042230Z JUN 80	" 142 210912Z JUN 80	" 252002Z JUN 80	" 120501Z JUN 80	" 120507Z JUN 80	" " 111039Z JUN 80	" 140445Z JUN 80	" " 072131Z JUN 80	" " 081120Z JUN 80	" " 081124Z JUN 80	X 143 290457Z JUN 80	" 211111Z JUN 80	NIMITZ 031930Z JUN 80
	USIT.	$\overline{}$				×	×	×	×		×	×	×	×	×	×	×	×	×	×	×	×
	AROHS	×	×	×	×			^		×												
	DISP /		REP	REP	CER	_	ВСМ	BCM	REP	HS1					ВСМ			BCM		ВСМ		ВСМ
							<u> </u>										-			OCK		
	CAUSE	FASTENER	UNK	UNK	BOLT	1/4 x 32 BOLT	5/16 BOLT	1/4 x 28 BOLT	CALFAX	SUSP GRAVEL	UNK	UNK	UNK	UNK	SCREW	SUSP TIRE RUBBER	UNK	SCREW OR BOLT	UNK	MAIN LANDING GEAR DOWNLOCK PIN	UNK	10/38 SCREW
	CAUSE	FASTENER	MAJ UNK	MAJ UNK	MAJ BOLT	MAJ 1/4 x 32 BOLT	MAJ 5/16 BOLT	MAJ 1/4 x 28 BOLT	MAJ CALFAX	MAJ SUSP GRAVEL	MIN UNK	MIN UNK	MIN UNK	MIN UNK	MAJ SCREW	MIN SUSP TIRE RUBBER	MIN UNK	MAJ SCREW OR BOLT	MIN UNK	MAJ MAIN LANDING GEAR DOWNI PIN	MIN UNK	10/38 SCREW



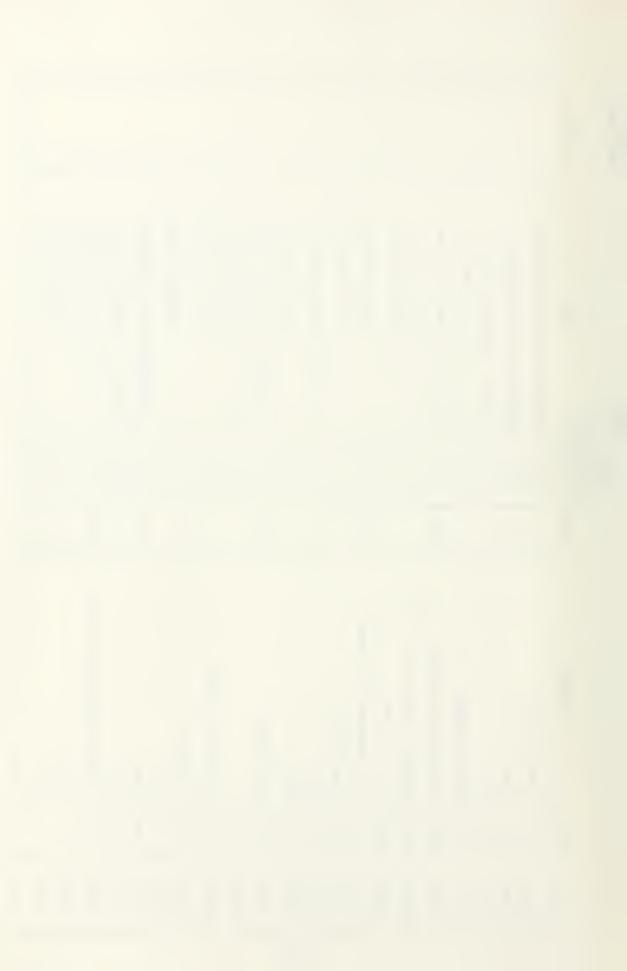
TF30-P414 JUN 1980 JCN	
FEST CELL	OCEANA 032044Z JUN 80 " " " FITRON 41 262146Z JUN 80 EISENHOWER 031818Z APR 80
SHORE	
DISP /2	
DI	BCM BCM BCM BCM
CAUSE	UNK SUSP FASTENER SUSP SCREW UNK
CAT	
S/N	695193 687141 674658 679263 695166



TF30-P414 JUL 1980	JCN				7																	
ZZ CETT	REF	FITRON 211 051408Z JUL 80	" " 051337Z JUL 80	142 031350Z JUL 80	" 143 091218Z JUL 80	" 142 0811072Z JUL 80	" 160209Z JUL 80	" 143 170549Z JUL 80	" 211 161250Z JUL 80	RANGER 140734Z JUL 80	FITRON 2 142200Z JUL 80	" 142 021312Z AUG 80	" " 010537Z AUG 80	" 1 230450Z JUL 80	" 142 261721Z JUL 80	" " 280528Z JUL 80	" 124 292130Z JUL 80	" 142 301418Z JUL 80	MIRAMAR 08007Z AUG 80	FITRON 14 222037Z JUL 80	" 41 312301Z JUL 80	
JAE JAE	HS HS	×	×	×	×	×	×	×	×	×		×	×	×	×	×		×			×	
1.0	7										×						×			×		
	DISP	BCM	RFI		BCM	REP			BCM	BCM	REP							REP	BCM			
	CAUSE	SUSP NON-SKID	SUSP 1/4" BOLT	UNK	UNK	SUSP CALFAX	UNK	UNK	ICS HEADSET ASSY	UNK	NUT OR BOLT	UNK	UNK	UNK	UNK	UNK	UNK	UNK	NUT & BOLT	GUN SAFETY PIN	STEEL NUT	
	CAT	MAJ	MAJ	MIN	MAJ	MIN	MIN	MIN	MAJ	MAJ	MAJ	MIM	MIN	MAJ	MIM	MIN	MAJ	MAJ	MAJ			
	S/N	679376	695442	687298	679320	687484	695402	687150	687105	679434	687103	687020	695402	679417	695019	687123	687127	674659	679542	701169	679259	



TF30-P414 AUG 1980	JCN																					
TTED	REF	FITRON 124 091908Z SEP 80	RANGER 111127Z AUG 80	FITRON 2 022101Z SEP 80	" " 022100Z SEP 80	FITRON 24 150822Z AUG 80	" 51 231501Z AUG 80	" 111 021843Z SEP 80	" 192215Z AUG 80	" " 271733Z AUG 80	" 142 050502Z AUG 80	" " 091117Z AUG 80	EISENHOWER 180434Z AUG 80	FITRON 142 212028Z AUG 80	" " 212037Z AUG 80	" " 212032Z AUG 80	" " 030855Z SEP 80	EISENHOWER 301022Z AUG 80	FITRON 143 100448Z AUG 80	" 211 132125Z AUG 80	" 101 111700Z AUG 80	" 14 141506Z AUG 80
3	IIHS															<u></u>		~	~	×		×
JE JE	TOHS	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×		×	
	DISP /					~							5'			Σ		₹.		5		1-7
						BCM			BCM				BCM			BCM		BCM		BCM		3CM
	CAUSE	PANEL SCREW	UNK	UNK	SUSP FASTENER	INNER WHEEL BEARING BCM	LANDING GEAR SAFETY LOCK	SUSP FASTENER	A/A GUNNERY TGT BANNER BC	HSD FILTER	UNK	UNK	F/D DEBRIS BC	=	NOSE TIRE RUBBER	METAL OBJ	UNK	UNK	UNK	PIECE DIFFUSER RAMP SEAL BC	UNK	UNK BCM-7
	CAT	PANEL	MAJ UNK	MAJ UNK	MIN SUSP FASTENER		MAJ LANDING GEAR SAFETY LOCK	MIN SUSP FASTENER	BANNER	MIN HSD FILTER	MIN UNK	MIN UNK		min " min	MIN NOSE TIRE RUBBER		MIN UNK		MIN UNK	DIFFUSER RAMP SEAL	UNK	



TF30-P414 AUG 1980	JCN	PD1-	
SST CELL	REF	FITRON 101 151300Z AUG 80 SAN DIEGO 281517Z AUG 80	
dI	HI HS		
HORE	15	× ×	
	DISP		
	CAUSE	SUS CALFAX MAT FAIL TOW CABLE BANNER	
	CAT		
	S/N	679342 679322	



TF30-P414 SEP 1980	JCN																					
TTED I)/ REF	FITRON 124 082041Z OCT 80	" 1 061452Z SEP 80	RANGER 090555Z OCT 80	FITRON 24 300615Z SEP 80	" 51 231901Z SEP 80	" 114 181131Z SEP 80	" " 061401Z OCT 80	" 124 181535Z SEP 80	" 291525Z SEP 80	" 142 220229Z SEP 80	291602Z SEP 80	011634Z OCT 80	EISENHOWER 161120Z SEP 80	FITRON 142 131909Z SEP 80	" " 081801Z SEP 80	" " 081758Z SEP 80	" " 081805Z SEP 80	" 143 011115Z OCT 80	" " 010831Z OCT 80	" " 160522Z SEP 80	" " 070757Z SEP 80
TTED I	IHS			×	×						×	×	×	×	×	×	×	×	×	×	×	×
JA B	OHS	×	×			×	×	×	×	×												
	DISP													BCM	BCM							
	CAUSE	UNK	UNK	UNK	CAP & METAL RIM SUNGLASSES	UNK	SUSP GRAVEL	FASTENERS	SUSP INT MAT FAIL	SOFT OBJ	PIECES OF MISSILE NOSE GEAR ASSY	NON-SKID	UNK	UNK	GUN SAFETY PIN	NON-SKID	NON-SKID	NON-SKID	UNK	UNK	SUSP SAFETY WIRE	UNK
	CAT	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MIN	MIN	MIN	MAJ	MAJ	MIM	MIM	MIM	MIM	MIM	MIM	MIN
	S/N	695489	695491	679296	679420	701283	701270	687111	674657	679456	695046	695564	687028	687086	695019	687119	687028	679484	679315	679447	679340	687144



TF30-P414 SEP 1980	JCN								
CELL	(S) (S) (REF	FITRON 143 110429Z SEP 80	" 213 261545Z SEP 80	101 081845Z SEP 80	NIMITZ 101711Z SEP 80	" 102148Z SEP 80	FITRON 142 220233Z SEP 80	NIMITZ 232138Z SEP 80	
	dIHS								
E	ROHS	×	×	×	×	×	×	×	
	3P /								
	DISP	BCM							
	CAUSE	IFR PROBE DOOR	SUSP FASTENER	SUSP CALFAX	UNK	UNK	UNK	NOSE GEAR DOWN LOCK PIN	
	CAT	MAJ	MAJ				MIN		
	S.	695003	679281	687057	687120	697443	679434	679418	



TF30-P414 OCT 1980	JCN										
PELL P CELL	REF	EISENHOWER 040603Z OCT 80	FITRON 142 061129Z OCT 80	OCEANA 061807Z OCT 80	FITRON 143 080558Z OCT 80	" 101 101430Z OCT 80	" 142 111120Z OCT 80	" 161012Z OCT 80	" 143 161554Z OCT 80	AIRTEVRON 4 250100Z OCT 80	
d	IHS										
RE	OHS	×	×	×	×	×			×	×	
	DISP	всм					BCM		BCM		
		Щ					Щ				
	CAUSE	UNK	UNK	SUSP GUN PANEL CALFAX	UNK	BROKEN PANEL CORNER	CALFAX	UNK	SUSP CALFAX	SUSP COCKPIT SAFETY PIN & FLAG	
	CAT	MAJ	MIN		MAJ		MIN	MIN	MAJ	MAJ	
	S/N	687086	687020	695404	679422	695419	679379	695405	695556	687112	



TF30-P414 NOV 1980 JCN	
SHIP CELL	EISENHOWER 101318Z NOV 80 " 142 151855Z NOV 80 " " 151856Z NOV 80 " 143 181631Z NOV 80
AHORS	× × × ×
DISP /	
CAUSE	UNK UNK UNK
CAT	MAJ MIN MIN MAJ
N/S	687020 679484 679484 679328 687144



TF30-P414 DEC 1980	JCN			AB2-			
TTIO LE	// REF	N 142 021100Z	32 092027Z DEC 80	" 101233Z DEC 80	AMERICA 131322Z DEC 80	KENNEDY 192147Z DEC 80	
TTAD LST.	7 / 25/ 2	×	×	×	×	×	
	DISP /				BCM7		
	CAUSE	UNK	SUSP METAL OBJ	SUSP ICE	UNK	SUSP ICE	
	CAT	MIM				MAJ	
	S/N	687255	679461	701213	687141	701213	



1-																		
TF30-P408 JCN																		
TP																		
SHIP CELL REF	ATKRON 174 132010Z NOV 79	" 205 172006Z NOV 79	" 232000Z JAN 80	" " 032030Z FEB 80	" 122 271700Z FEB 80	" 271830Z MAR 80	" " 061730Z MAY 80	LEMOORE 111521Z JUN 80	* 800110 3 0501	* 800205 3 0301	* 800207 3 0101	* 801004 3 0301	** 791012 5 21370	** 791120 5 23000	** 800425 5 16070	** 800912 5 14450		
TEST		,											*	*	_*	*_	 	
SHORE																		
348	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	 	
DISP							BCM-1	BCM-1									 	
CAUSE	UNK	UNK	UNK	UNK	INT MAT FAIL	INT MAT FAIL	INT MAT FAIL	GRAVEL	NUTS	UNK	BIRD	BIRD	UNK	UNK	SUSP RIVET	RUBBER		

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MAJ

MAJ MAJ

MAJ

CAT



TF34GE-400 JUN-DEC 1979	JCN		AP2-921235													
	REF	AIRANTISUBRON 41 071646Z JUN 79	rz 202105z AUG	" 252248Z AUG 79	CUBI PT 110147Z SEP 79	CUBI PT 220157Z OCT 79	AIRANTISUBRON 31 182001Z OCT 79	" 32 191905Z OCT 79	" 192101Z OCT 79		AIRANTISUBRON 41 101708Z DEC 79	AIRANTISUBRON 41 121834Z DEC 79	NIMITZ 270830Z DEC 79			
The state of the s	HS									 ×			×	 	 	_
BRE	OHS	×	×	×	×	×	×	×	×	 	×	×		 		
	DISP /	REP			AWP	BCM										
	CAUSE	UNK	UNK	UNK	METAL OBJ	METAL OBJ	UNK	UNK	INT MAT FAIL	INT MAT FAIL	UNK	UNK	UNK			
	CAT	MIN			MAJ	MAJ					MIM	MIN				
	S/N	202001	202033	202051	202093	202330	202278	202183	202174	202321	202011	202316	202219			

 $\{\}$



TF34GE-400 JAN-JUN 1980	JCN		PQ1-0025157					PQ1-007226								
TE CETT	REF	AIRANTISUBRON 29 170030Z JAN80	" 33 291905Z JAN80	" 21 310130Z JAN80	AIRANTISUBRON 31 082000Z FEB80	" 32 271815Z FEB80	AIRANTISUBRON 31 020332Z MAR80	" 33 122312Z MAR80	" 41 111925Z MAR80	* 800425 5 11230	AIRANTISUBRON 32 041827Z MAY80	RANGER 052327Z JUN 80	SAN DIEGO 181449Z JUL 80	=		
4	THE															
EN	OHO	×	×	<u> </u>			 ×	×	×	×	×	×	×	×	 ·	 -
				×	×		 								 	 -
	DISP					BCM	BCM				BCM	BCM	AWP	BCM		
	CAUSE	INT MAT FAIL	CRANIAL HELMET	BIRDSTRIKE	INTAKE SCREEN LATCH	UNK	UNK	CAM LOCK FASTENER	UNK	SUSP RIVET HEAD	SUSP INT MAT FAIL	UNK	UNK	UNK		*UNSATISFACTORY REPORT FILE, RECORD IDENT
	CAT	MAJ	MIN	MAJ				MIM	MIN			MAJ	MAJ	MAJ		SFACTOR
	S/N	202338	202153	202138	202024	201110	202406	202411	201103	202089	202187	202416	202308	202416		*UNSATI



TF34GE-400 JUL-SEP 1980	JCN																	AN3-0258198		
RE CETT)/ REF	AIRANTISUBRON 21 021744Z JUL80	" 38 071826Z JUL80	" 250847Z JUL80	" 21 242220Z JUL80	" 30 282120Z JUL80	" 24 251645Z JUL80	=		AIRANTISUBRON 32 191835Z AUG80	" 201657Z AUG80	RANGER 092033Z AUG 80	AIRANTISUBRON 33 292040Z SEP80	RANGER 221053Z SEP 80	RANGER 170715Z SEP 80	AIRANTISUBRON 32 271948Z SEP80	" 271954Z SEP80	* 800926 5 19050	* 800927 5 03015	
d	IHC												 							
RE	OHS	×	×	×	×	×	×	×		×	×	×	 ×	×	×	×	×	×	×	 -
	-								 +	7	7		 				7			 1
	DISP	ВСМ	BCM	_	M/I					BCM-7	BCM-7						BCM			
	CAUSE	INTAKE SCREEN PARTICLE	SUSP NON-SKID	CLOTH RAG	SUSP SMALL ROCK	UNK	INT MAT FAIL	INT MAT FAIL		UNK	UNK	HOLDBACK FITTING	RADOME LATCH FASTENER			UNK	UNK	UNK	INT MAT FAIL	RY REPORT FILE, RECORD IDENT
	CAT	INTAKE SCREEN PART	MAJ SUSP NON-SKID	MAJ CLOTH RAG	MAJ SUSP SMALL ROCK	UNK	INT MAT FAIL	INT MAT FAIL		UNK	UNK	MAJ HOLDBACK FITTING	RADOME LATCH FASTENER		-	UNK	UNK	UNK	INT MAT FAIL	RECORD



TF34GE-400 OCT-DEC 1980	JCN			 7.31						
ST CELL	O O O REF	X AIRANTISUBRON 32 061815Z 0CT80	x 30 102045Z OCT80	 X KENNEDY 021415Z NOV 80	: : : : : : X	: : : : : : : : : : : : : : : : : : :	X AIRANTISUBRON 22 131355Z NOV80	x atrantisibron 30 092101Z DEC80		
	DISP /			BCM 7	BCM 7	BCM 7				
	CAUSE	UNK	SUSP SCREW	UNK	UNK	INT MAT FAIL	SUSP INT MAT FAIL	TNT MAT FAIT.	TTTT TUTT THE	
	CAT									
	S/N	202204	202059	202009	202123	202158	202433	101606	161707	



979	1-	<u> </u>		26	47					11		4	
J52-P-6B JUN-DEC 1979	JCN	sco-917108	suo-920006	TAE-9218856	TB2-9191447					AC6-9311411	, I	TB1-936004	
J52 JUN	-	SCO	sno	TAE	TB2				-	AC6	WC6-	[TB]	
TTJO LS	REF	* 790620 4 0401	* 790719 3 0501	** 790813 5 17030	** 790824 5 18160	ATKRON 127 161429Z AUG 79	" 151729Z AUG 79	FLECOMPRON 2 181902Z OCT 79	HAMS 31 261941Z OCT 79	** 791114 5 17450	* 791213 4 0201	* 791226 3 0401	
41	HS				×								
JAC	HS	×	×	×		×	×	×	×	×	×	×	
	DISP /												
	CAUSE	GREASE RAG	UNK	UNK	UNK	SMALL HARD OBJ	SOFT MATERIAL	INT MAT FAIL	UNK	CONCRETE	PARACHUTE SHIPPING STREAMER	O ₂ MASK PROTECTIVE BAG	
	CAT					MAJ	MIN						
	S/N	650120	649895	620019	650008	636697	650004	650447	636407	649710	650104	649811	

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J52-P-6B JAN-JUN 1980	JCN	SUO-000934	JAN 80	KH2-0043751	TB5-0041951	P14-0064128	KH2-006206	APR 80	Z APR 80	2 10-015171	200-0131/1	•	
TT CETT	Fil REF	* 800109 3 0801	CHINA LAKE 112331Z	** 800214 5 23000	** 800220 5 14390	** 800307 5 20500	* 800302 3 0201	AIRTEVRON 5 100104Z	FLECOMPRON 7 232015Z	<	1050 4 USOT		
DRE	HS	×	×	×	×	×	×	×	×		×		
	DISP/			 									
	CAUSE	SCREWDRIVER	SAFETY WIRE	UNK	UNK	STONE/CONCRETE	UNK	SUSP GRAVEL	SAFETY WIRE	STORONIO CARDINA	INTAKE SKREEN		
	CAT		MAJ	MIN				MAJ	MIN				
	S/N	650524	636546	650347	649919	650377	636183	620449	650457	L (649925		4

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J52-P-6B JUL-DEC 1980	JCN	PE6-0203030		TAB-023208							
TTED LE)/ REF	** 800729 5 15390	FLECOMPRON 2 161244Z JUL 80	ATKRON 45 042154Z AUG 80	ATKRON 127 042239Z SEP 80	HAMS 31 161330Z OCT 80	TACELRON 33 301616Z OCT 80	MAG 42 121630Z DEC 80			
47	HS										-
नुस्	HS	×	×	×	×	×	×	×			
	DISP										
	CAUSE	SAFETY WIRE	UNK	BIRD	UNK	CANOPY ACCESS DOOR LATCH	UNK	NEEDLE NOSE PLIERS			
	CAT				MAJ	CANOP					
,	S/N	650170	650454	650140	649861	650204	650268	650385			

** UNSATISFACTORY REPORT FILE, RECORD IDENT



J52-P-8A/B JUN-JUL 1979 JCN			
CELL REF	IEGO O	TACELRON 33 191305Z JUL 79 VMA 311 181837Z JUL 79	
ZHIP SHIP TEST CELL			
HORS	×	× ×	
DISP		ВСМ	
CAUSE	METAL OBJ	CAMERA (PERSONAL) BIRD	
ر د 1	MAJ	MAJ	
2	650558	636050	



J52-P-8 A/B AUG-DEC 1979 JCN	SU0929736	
DISP / SHIP CELL REF	X HAMS 24 280219Z AUG 79 X FLECOMPRON 7 162055Z AUG 79 X HAMS 12 270220Z SEP 79 X FLECOMPRON 5 010800Z OCT 79 X 791103 4 1001 X * 791103 4 1001 X ** 791210 5 15310	
CAUSE	MIN UNK MIN UNK MAJ INTAKE SKREEN SCHRADER VALVE INTAKE SCREEN INT MAT FAIL MAJ UNK	FLIGHT MISHAP REPORT FILE, RECORD IDENT UNSATISFACTORY REPORT FILE, RECORD IDENT
S/N C	650595 M 661203 M 661306 M 650600 M 650544 660822 660846	* FLIGHT ** UNSATIS



J52-P-8A/B JAN-JUN 1980	JCN	A11-001614	SFO-0004A00		STO-0115567									
TTTT	o/ NEF	* 800116 3 1001	** 800113 5 12530	VMAT 102 221610Z FEB 80	** 800427 5 20350	FLECOMPRON 7 211636Z APR 80	HAM 13 292229Z APR 80	FITRON 43 022048Z APR 80	HAMS 32 101747Z APR 80	HAMS 13 051705Z MAY 80		FLECOMPRON 2 091442Z JUN 80	FITRON 43 291902Z JUN 80	
TTJO L	IHS									×		×	×	-
	DISP /	×	<u>×</u>	×	×	×	<u>×</u>	×	×				_	
	CAUSE	UNK	UNK	UNK	UNK	UNK	DEBRIS	BIRD	FASTENER	TINK	ONN	IFR PROBE COVER	EXT CANOPY HANDLE ASSY	
	CAT			MAJ		MIN	MIN			F. A	CETA			
	S/N	677460	660704	661590	677255	660895	677311	677399	661389	661183	COTTOO	677549	677399	

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J52-P-8A/B JUL-DEC 1980	JCN	WA5-0170445			
TOETT GETT	REF	** 800701 5 21145	HAMS 13 192341Z SEP 80	FITRON 171 241348Z NOV 80	
SE	ITHS				
	DISP /	×	<u>×</u>	×	
	D		· - · · · · ·		
	CAUSE	UNK	UNK	UNK	
	CAT		IU DAM	D	
	S/N	9/	661218	650577	

** UNSATISFACTORY REPORT FILE, RECORD IDENT



J52-P-408 JUN-DEC 1979 JCN		GE3-919440	SLO-923550			FFF-9274514	FFF-9318217						
ਜਜਹ		00713 3 0301	* 790823 3 0401	FITRON 43 021830Z AUG 79	VMA 311 221958Z OCT 79	** 791113 5 17530	** 791123 5 00090	VMA 211 130745Z NOV 79	VMAT 102 081705Z NOV 79	VMA 211 040432Z DEC 79			
EST CELL	DISF /9/9/6	×	×	×	×	×	×	×	×	×			
	CAUSE	METAL OBJ	SUSP DEBRIS	UNK	UNK	UNK DEBRIS	UNK	UNK	CENTERLINE BREECH CAP	UNK			ETICHM MICHAE DEDODM RITE DECORD INFN
1	CAT				MAJ			MAJ	MIN	MAJ			I MTCU
	S/N	678550	678390	678182	678591	678395	678281	678173	678167	678465			* FITCH

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** UNSATISFACTORY REPORT FILE, RECORD IDENT



J52-P-408 JAN-DEC 1980	JCN	GE3-005191			SLO-0136137				TAB-026594	GB6-	
TT CETT	REF	* 800220 3 0201	VMAT 102 201640Z FEB 80	VMA 311 270016Z FEB 80	** 800605 5 23540	AIRTEVRON 150011Z JUL 80	VMA 311 071745Z AUG 80	VMA 311 222357Z SEP 80	* 800921 3 0201	* 801018 3 0101	
d.	IHS										
	DISP /	×	×	<u>×</u>	×	×	×	<u>×</u>	×	×	
	CAUSE	UNK	TURN-UP SCREEN	SAFETY WIRE	SUSP SMALL STONE	MATERIAL FROM CSD DOOR	UNK	UNK	BIRD	BIRD	
	CAT		MAJ	MAJ		MAJ	MIN	MAJ			
	S/N	678299	678496	678520	678422	678400	678258	678381	678170	678347	

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TF41A-2A/B JUN 1979	JCN	PF6-917118																		
CETT	REF	ATKRON 97 230040Z JUN 79	LEMOORE 052310Z JUL 79	:	:	:	CUBI PT 110507Z JUN 79	MIDWAY 090730Z JUN 79	LEMOORE 062254Z JUN 79	=	RANGER 130357Z JUL 79	CUBI PT 200600Z JUN 79	=	:	:	:	= =			
J. CETT	SHI							×		×	×									
480	120	×	×	×	×	×														
	DISP		BCM	REP	BCM	всм	BCM	BCM	BCM	BCM	BCM								 •••••	
	CAUSE	SUSP SCREW	UNK	SUSP SAFETY WIRE	UNK	SUSP MTL OBJ	UNK	TOOL	UNK	UNK	INT MAT FAIL	SUSP ROCKS	=	=	:	=	=			
	CAT	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MIN	MAJ	MAJ			
	S/N	141280	141883	141323	142592	141625	141895	141548	141287	141912	141568	141957	141276	141369	142568	141360	141928			



BIBLIOGRAPHY

Commander Carrier Strike Force Seventh Fleet, Commander Carrier Group Five, Instruction 4790.2A.

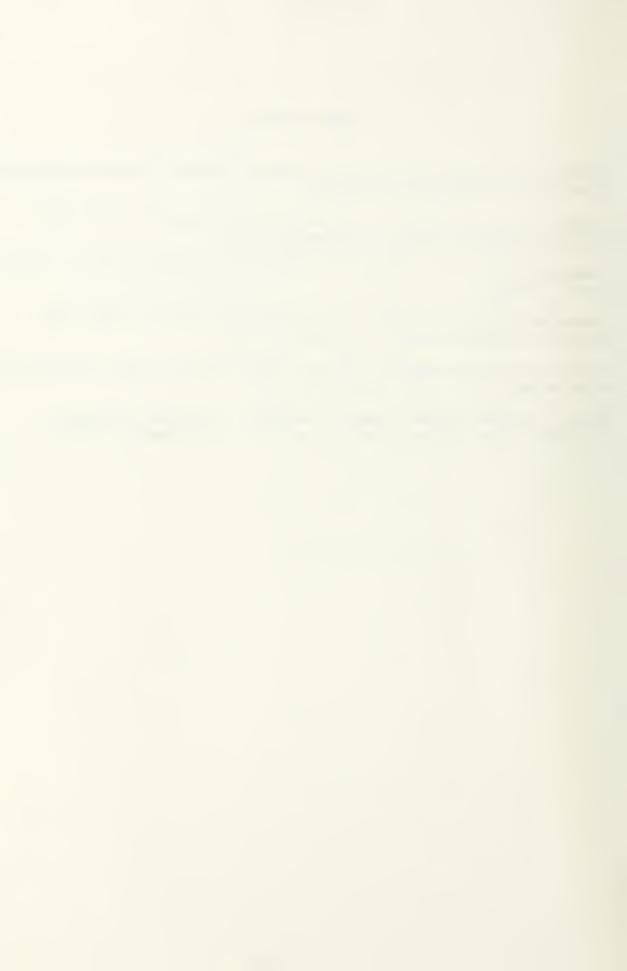
Commander Naval AirForce, United States Atlantic Fleet, FOD Reports from June 1979 to December 1980.

Commander Naval Air Force, United States Atlantic Fleet, Instruction 13720.9E.

Commander Naval Air Force, United States Pacific Fleet FOD Reports from June 1979 to December 1980.

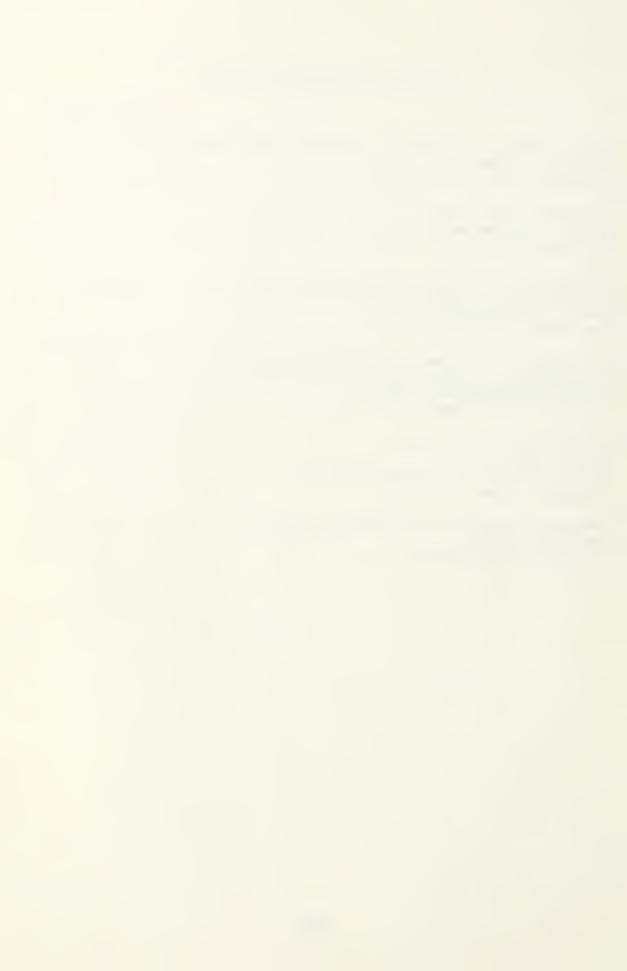
Department of the Navy, Office of the Chief of Naval Operations, Washington, D.C., Instruction 4740.2B

Naval Aviation Safety Center, Norfolk, Virginia, Accident/ Incident Report Summary from June 1979 to December 1980.



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